the OIL AND GAS JOURNAL

MARCH 26
1936

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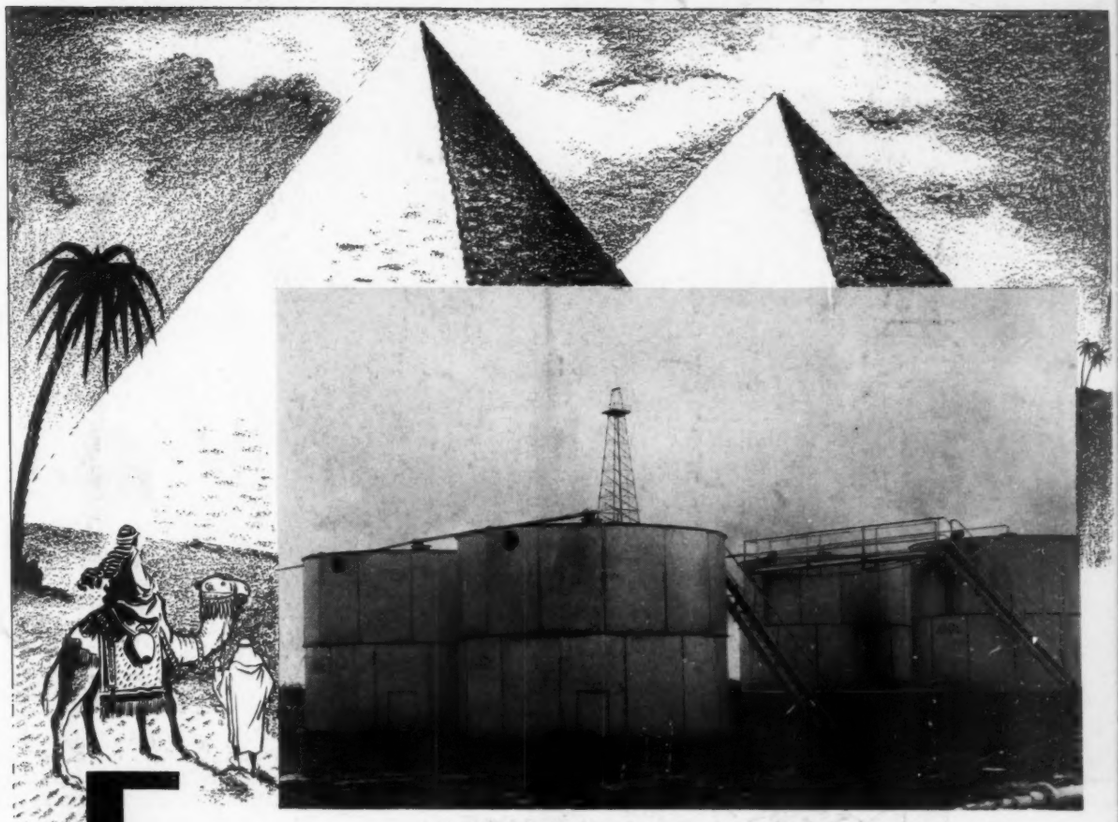

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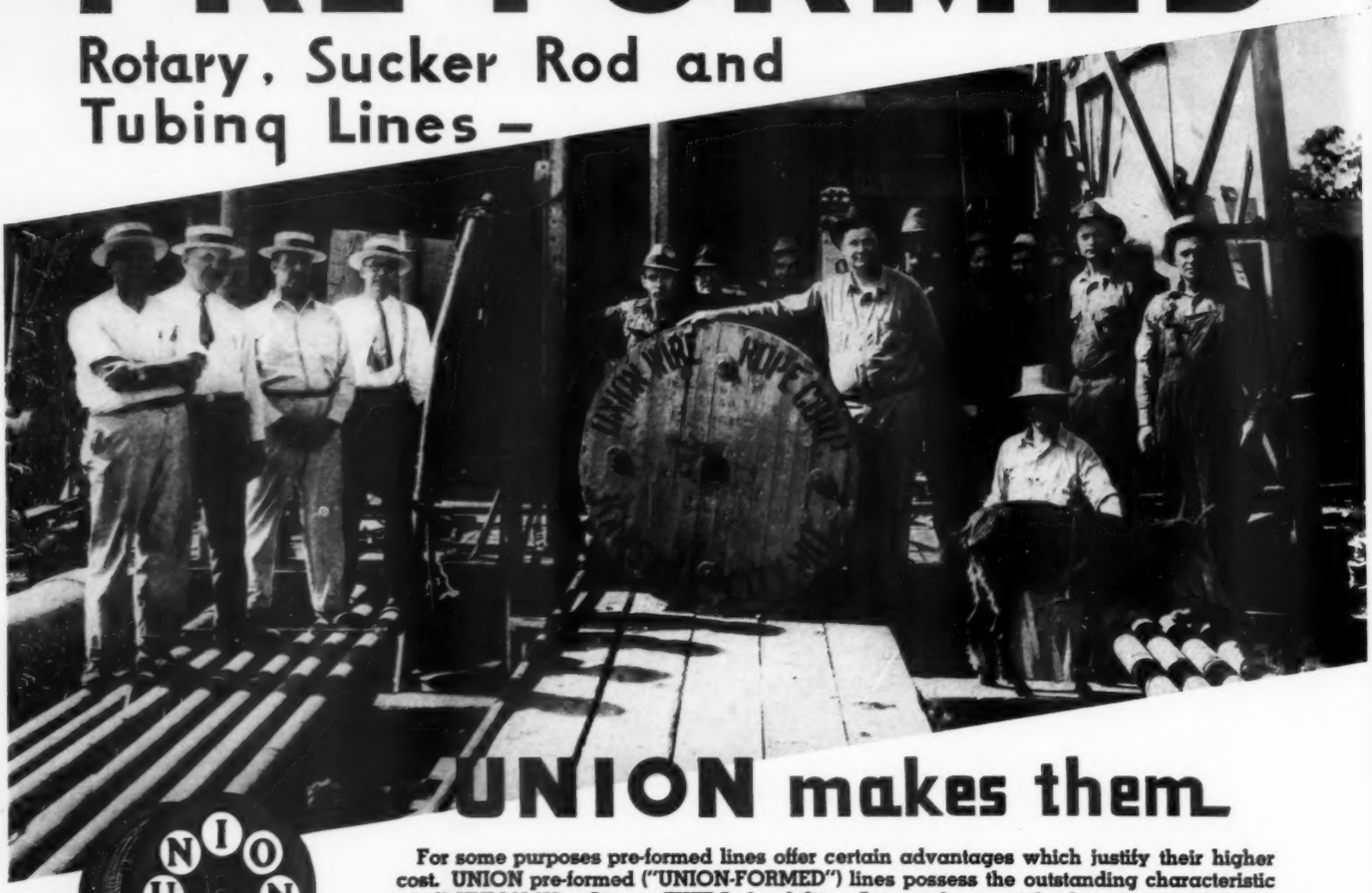

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The photo shows a group of Oklahoma oil men who find UNION Lines dependable and extra-durable. Well is original Binger deep-test, Caddo County, Oklahoma. Left to right, the men are: Sid Telliferro, water pumper; Hal Gruber, Union Wire Rope Corp.; Hugh Rapp and Bob Rapp, General Supt., and Vice Pres. and General Mgr. Denver Prod. & Ref. Co.; C. Tudtedge, back-up man; Jack Woolems, fireman; Pete Walton, fireman; Chas Walton, driller; E. Hale, back-up man; W. M. Niday, derrickman; H. Rains, pipe racker; M. C. Golden, derrickman, E. B. Whatly, pipe racker; F. D. Collins, custodian; Bill Henson, driller; NANNIE, The Mascot.

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MARCH 26, 1936
VOL. 34, NO. 45

Extra copies of special issues are reserved for subscribers' needs and may be purchased by subscribers at the price of 50 cents per copy

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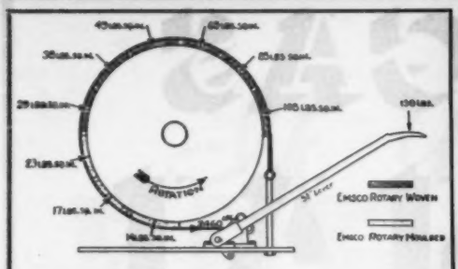

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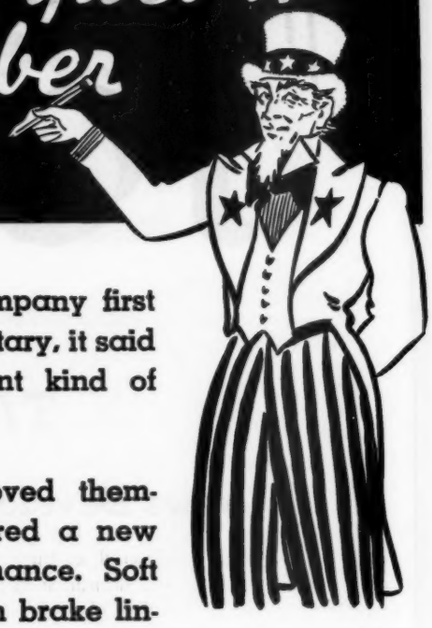

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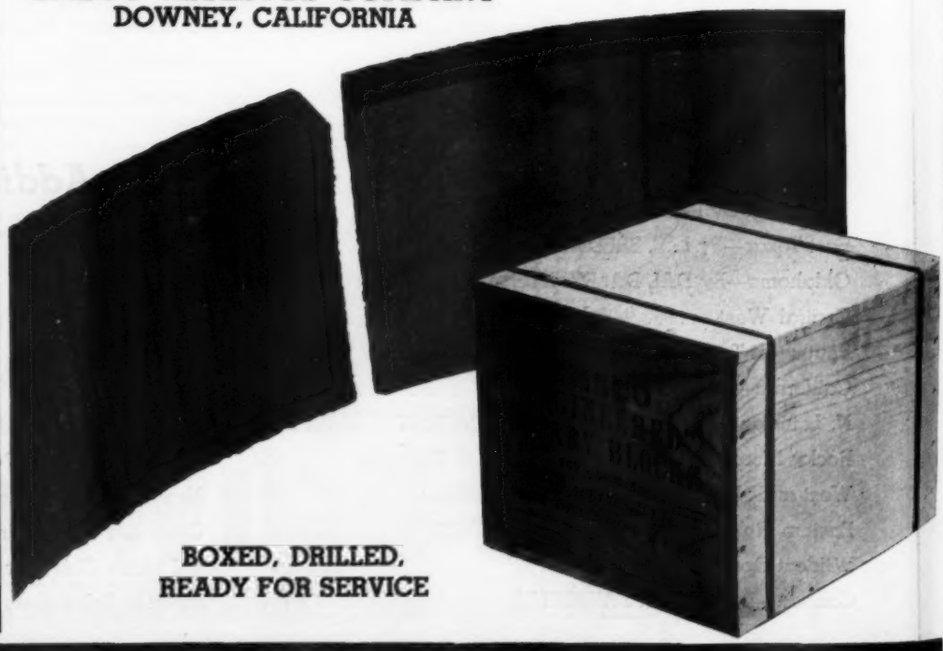


BOXED, DRILLED, READY FOR SERVICE

Industry Has Reasons for Hopefulness

GRATIFYING conditions in East Texas, Rodessa well in hand for the time being at least, progress in California and an increasingly healthy situation in the Middle West afford ground for the better feeling exhibited throughout the oil industry. Added evidence is disclosed too that February business, disappointing though it was as a result of weather conditions, maintained a higher level than appeared at the time. Conservative estimates now indicate that the average daily shipments of gasoline from refineries in that month were more than 4 per cent higher than those of the same month in 1935. Predictions that consumption this year will enable refiners to reach the end of the peak season with no surplus stocks seem well founded. The predictions are conditioned, of course, upon continued willingness to limit runs to stills where that course is practicable.

Improved conditions outside this country are seen in the rising prices for foreign refined products. Companies dependent upon foreign outlets are in a more favorable position than they were at the opening of the year, and the price situation with reference to European business has brightened particularly since the first of March.

Average daily production in the United States last week was 62,000 barrels per day more than the Bureau of Mines estimate of daily crude oil requirements in April, just made public. Oklahoma, Kansas and Louisiana all had production increases compared with the preceding week.

The discovery well in the Lerado pool in Reno County, Kansas, completion of which was delayed by a fishing job, proved a 5,570-barrel producer when tested. A pool was opened in northeastern Stafford County, Kansas, with a Lansing lime producer starting at 100 to 150 barrels of oil and 5,000,000 feet of gas daily.

Production 2,859,296

Increase 42,479

An important strike was made in Colorado. Dakota sand at 1,100 feet in depth yielded about 2,000 barrels a day in a test in Archuleta County. A new well in the Medicine Bow field in Carbon County, Wyoming, flowed 340 barrels of 64-gravity crude the first hour. On the west side of the Cut Bank field, in Montana, a 2,000-barrel well from Sundance sand was reported.

A high-gravity oil pool was opened in Brazoria County, Texas. The Seven Sisters, Samfordyce and Saxet pools in Southwest Texas were extended and two wildcat wells in Brooks and Medina Counties were showing for small producers. A deep lime pool was opened in Crane County, in West Texas, the discovery well starting at 867 barrels a day.

There now appears hope of reducing California's output to the goal of 537,000 barrels per day, or close to it.

Important tests in Carter and Love Counties, Oklahoma, were expected to be completed this week.

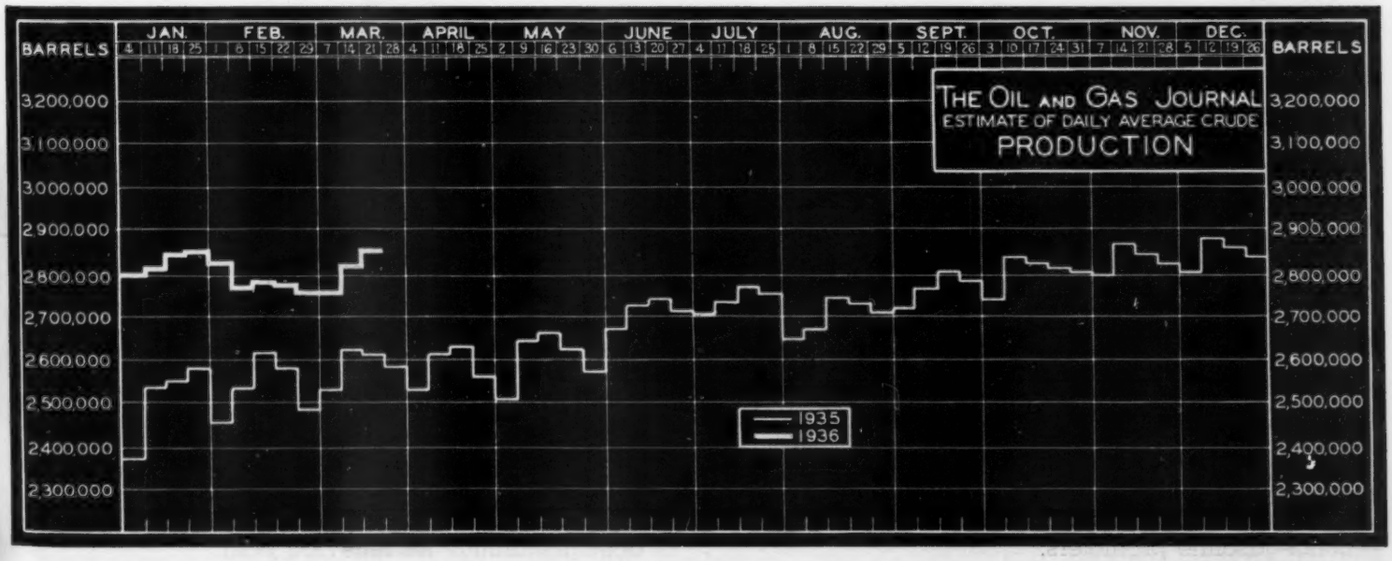
Daily Average Production for Week

	March 21 1936	March 14 1936	March 23 1935
Oklahoma City	127,025	120,775	162,975
Seminole-St. Louis	100,150	97,550	100,775
Remainder of State	298,725	296,450	250,795
Total Oklahoma	525,900	514,775	514,545
East Texas	456,050	449,804	455,799
West Texas	175,652	173,898	145,975
North Central Texas	82,347	81,550	90,260
Texas Panhandle	62,754	59,147	65,055
East Central Texas	49,798	50,603	52,427
Gulf Coast—Texas	228,250	227,752	181,890
Southwest Texas	73,303	73,348	60,264
Total State of Texas	1,128,154	1,116,102	1,051,670
North Louisiana	65,050	57,150	23,060
Gulf Coast—Louisiana	136,500	135,600	95,243
Total Louisiana	201,550	192,750	118,303
Santa Fe Springs	43,000	43,300	39,100
Long Beach	69,500	69,000	65,250
Mountain View	26,900	27,250	12,000
Kettleman Hills	77,750	77,250	65,250
Remainder of State	349,100	349,200	320,400
Total California	566,250	566,000	502,000
Kansas	150,975	141,150	153,050
Arkansas	29,705	29,765	30,815
Eastern fields	108,000	107,500	105,250
Michigan	35,072	34,385	36,912
Rocky Mountain area	113,690	114,390	95,320
Total United States	2,859,296	2,816,817	2,607,865

Crude Oil Stocks in U. S.

(BUREAU OF MINES ESTIMATES)

Week ending March 14, 1936	310,120,000
Week ending March 7, 1936	310,105,000
Week ending March 16, 1935	339,133,000



SPARKS FROM THE NEWS

Revenuisance

Louisiana's tax collections on Rodessa crude are nearing $5,000 per day. One reason why some people cannot enthuse over proration.

Migration

Standard of California enters Gulf Coast production picture. Down goes another old boundary fence.

Dividends

Stronger markets are being experienced along with firm crude prices. Reason? Control of production.

Speed

Oil executives are worried over increase of auto accidents. Safety measures are being discussed. Good committee should call upon manufacturers in Detroit.

Strike

Humble Oil Company recorded most interesting wildcat of week. Well in western Crane County, Texas, opens vast area for development work. Gulf Oil Corp. has immense lease holdings near-by.

Bulletin

Announcement extraordinary: technical men in agreement! Geologists meeting in Tulsa concede finding one billion barrels annually will do the job.

Target

East Texas hot oil nears all-time low, proving it can be done. Louisiana conservation authorities have a pattern at least.

Delusion

Ethyl alcohol can be made more cheaply from oil than corn, if large quantities are involved. Farmers are not being supplied with facts by alcohol-gasoline promoters.

Reinstatement

West Coast gasoline prices are due for restoration of last cut. Increase is expected by April first.

Cicero

Much excitement attends fight to extend drilling zone of Capitol Area in Oklahoma City. Militia threats are strangely reminiscent of Red River days.

Giants

Two of the three largest oil producing fields are abroad: East Texas, Baku and Lagunillas.

Interlude?

Rodessa registers third well on Texas side. Don't let present lull deceive. New outlets could change complexion over night.

Relativity

Common stock oil equities have increased five billion dollars in three years. This appears large until compared to national debt.

Pullmans

An optimistic report from the flooded area. Some people are not only using their sedans all day but are sleeping in them at night.

Obstacle

Fact still remains that gasoline stocks are too high. Disastrous floods are no help to consumption.

Curiosity

A man weighs more standing on a rock than sitting in a boat. To find out why—ask a geologist to explain the principle of the gravitometer.

Change

Straightrun gasoline once sold at a premium. Modern motors have changed that and last year about one-fourth was reformed by cracking.

Pillmerization

Oil has caused many headaches. Now by polymerization oil is supplying a substantial quantity of acetoacetanilide for relieving pain.

Billion Barrels of New Oil Yearly Geologists' Job

The petroleum geologist feels keenly the responsibility resting upon him to discover a billion barrels of new oil reserves each year to replace the drain of demand. This was the keynote of the annual meeting of the American Association of Petroleum Geologists held in Tulsa last week.

"Where are we to find this billion barrels of new oil per year which observers seem to think the nation will require for many years to come?" asked President Levorsen in his presidential address. "The oil industry is not interested in our contours, in our gravity maximia and minima, in our rock velocities, our theories and such, but it is interested in us only in so far as we can tell where to drill to find barrels of oil. It is our job to find this oil."

Personally, President Levorsen believes it can be found by concentrating upon stratigraphic traps and stratigraphic methods holding that regional stratigraphic variation from porosity to non-porosity has been a strong controlling factor in oil accumulation. He likened the search for "wrinkles," "noses" and "pimples" to hunting in Africa with air rifles and pop guns and never realizing there is big game in the country even after the natives repeatedly bring in lions and elephants. The "elephant" pools, he said, are of stratigraphic type. The "elephant" guns of stratigraphic discovery are first, a liberal drilling policy, followed by the most careful and complete sampling of the drilled formation that is possible. The ammunition is accurate analysis of these samples, correlation and comparison in the form of sand maps, paleogeologic maps, cross sections, overlaps, isopach maps and geologic history. The working out will require cooperative effort, free exchange of information and intelligent patience on the part of geologist and operator alike.

Restrictions a Factor

The present restrictions on production are an important factor in the renewed activity in exploration work according to W. B. Heroy, of the

"IT IS LIKE THIS"—W. B. Heroy tells Luther H. White "We must find a billion barrels of new oil each year"

NEW NEIGHBORS IN DALLAS—W. E. Wrather welcomes E. De Golyer as Texas Centennial City resident

STICKING BY THEIR GUNS—L. P. Garrett and L. C. Snider reiterate their well known views on crude oil reserves

BETWEEN SESSIONS — C. E. Dobbins, vice president, and Frank R. Clark, past president

A PUPIL TELLS HIS PROFESSOR—R. S. McFarland meets Prof. E. B. Branson, maker of geologists, University of Missouri, his former instructor at that seat of learning

New officers of American Association of Petroleum Geologists. Left to right: Charles Row, San Antonio, Tex., secretary-treasurer; L. C. Snider, New York City, editor; Ralph D. Reed, Los Angeles, Calif., president; A. Irving Levorsen, Tulsa, past president; C. E. Dobbins, Denver, Colo., vice president

Consolidated Oil Corp., New York. "With a limited daily production per well the underground reserve is produced more slowly," Mr. Heroy pointed out, "and more wells are required to yield the same daily production. The tendency is thus to build up the amount of oil underground which is not only proven but actually developed by drilling. To obtain the same daily production under proration as was formerly obtained under unrestricted operation new development is required and the trend is in the direction of greater proven reserves. Such reserves are already ample for the requirements of the industry. The cost of carrying them is rapidly becoming excessive."

California's Need

The latest plan adopted in California of rewarding operators with normal prices in those fields where production is curtailed in line with a state program of maintaining supply in line with demand is making progress according to G. Clark Gester of the Standard Oil Co. of California. Representatives from the western oil state at the meeting were interested in all the latest methods used which might aid in discovering new oil reserves. The greatest worry of major operators is not the unsettled situation of the past few months but centers in the finding of new oil fields needed to keep pace with a demand of approximately 200,000,000 bbls. yearly. New discoveries over the past three years have been conspicuous by their absence.

Kansas Opportunity

Marvin Lee, technical advisor, Kansas Conservation Commission, Wichita, Kans., said development of the oil possibilities of several counties in western Kansas as yet untested is assured for 1936 because of the intensive leasing campaign carried on during the past two or three years filling in blocks around old leases now having but a short time to run. This activity follows a very intensive geophysical study of these areas and will be the direct result of the development of methods of drilling that have reduced cost of testing to low figures and also because there is no gross production tax in Kansas upon oil discovered and produced.

West Central Texas

M. G. Cheney, consulting geologist, Coleman, Tex., and Leonard W. Orynski, the California Co., Dallas, Tex., agree that the activity in development of acreage now under lease in west central Texas, or the area west of Fort Worth and east of the Permian Basin of West Texas, will see a marked increase during this year. This will be brought about by the general agreement of the operators to space the wells farther apart than the old 10-acre spacing and this will reduce the cost of developing any block of leased land and by the application of good engineering practice and the conservation of the natural energy furnished by the gas in the reservoir the ultimate recovery will be larger. In this way many of the shallow Pennsylvanian sands will be opened for production and in some counties, particularly Archer County, deeper drilling will be carried on to try to develop pay horizons at 3,600 to 4,000 feet, where some wells have been completed with good showings. Operators in this area have come to realize the advantage to be gained by the application of wider spacing and better production methods and the real increased earning to be had with relatively smaller investment.

California Type Fields

James H. Gardner predicts that Oklahoma, and particularly the southern part, is entering into a period of development of oil fields of the California type where the oil is found in deeply dipping structures or in the synclines at depths varying from 5,000 to 10,000 feet. This trend is illustrated by recent discoveries near Healdton and in the Fox field in Carter County.

Critical Production Rate

L. P. Garrett again emphasized the need for paying stricter attention to the critical production rate of the various oil fields to determine the available supply of oil rather than give such serious consideration to estimated reserves. The oil that can be produced from day to day is all that is actually available and Mr. Garrett feels more attention should be given to determination of critical production rates of the various fields so that the consumers may know more definitely the oil he may expect. Dr. L. C. Snider, New York City, said he still sticks by his recent statements made in paper published in the A.A.P.G. Bulletin on possible shortage of oil.

Oil Scouts to Meet

Dwight L. Becker, chairman of the executive committee of the National Oil Scouts Association, has set the morning of March 28 as the date for the preconvention meeting of members of the association. It will be held in the Baker Hotel, Dallas, Tex. The purpose of the session will be to make final arrangements for the publication of the 1936 Yearbook, and to determine the time and place for the thirteenth annual Scouts convention to be held some time in May. Members of the executive committee and association members will be present.

P. A. B. to Be New Division of Petroleum Conservation

WASHINGTON, D. C., Mar. 23.—Now that the Petroleum Administrative Board and its limited functions are to be swallowed by the newly created Division of Petroleum Conservation in the Interior Department, steps are being taken to wind up the affairs of the board. Scheduled to go out of existence April 1 the P.A.B. is making last-minute revisions on its reports on production, refining and marketing.

It is expected the Petroleum Conservation Division will be manned by approximately the same staff as the Petroleum Administrative Board. This would place George Holland, chairman of the P.A.B., as director of the new division, assisted by E. B. Swanson and Doctor Frey, members of the board.

The new division will assist the Secretary of the Interior in administering the Connally hot oil act, and, under his direction, discuss the work of any agency dealing with oil and gas, coordinate information, and act as the contact agency with the Interstate Oil Compact Commission, present required data to the congress, attend oil and gas conferences in which the Department is interested, cooperate with the oil-producing states in the study of physical waste and the enactment of uniform oil and gas conservation laws, and contact other departments of the government whose work deals in any measure with oil and gas.

Labor Board Decision Upon Collective Bargaining

WASHINGTON, D. C., Mar. 24.—Holding the Brunswick, Ga., refinery of the Atlantic Refining Co. is engaged in interstate commerce, the National Labor Relations Board rules the Georgia refinery was subject to the terms of the labor act.

The case arose from complaints that the company had refused to bargain collectively with the Union, although the employers had discussed the matters with individual groups of employes, refusing to enter into any agreement with the union.

Trial Examiner John Lapp, former member on the Petroleum Labor Policy Board, ruled such conferences with individual employes, no matter how happily grievances may be adjusted, do not constitute collective bargaining as intended by the act.

"Collective bargaining means more than a discussion of individual problems and grievances with employes or groups of employes," the decision stated. "The grievances discussed were the individual problems of its employes and matters of ordinary detail."

Since the decision designates the union as the representative of the employes, it is unnecessary a secret ballot be held, the board ruled. The refinery has been ordered to cease and desist from its refusal to bargain collectively with the locals.

I.P.A.A. Convention

The executive committee of the Independent Petroleum Association of America has set the date for the annual meeting of the association as Monday, November 30, and Tuesday, December 1, at Oklahoma City, Okla.

May Extend Fitts Pool

Extension of the Fitts pool of Pontotoc County, Oklahoma, one-half mile east and slightly northeast is indicated by a Hunton lime showing in Blackstone and others No. 1 Moody, NE cor. section 27-2-7. It had a good showing of oil in the lime at 3,372 to 3,462 feet, and was drilling ahead.

Awarding of Leases in Galveston Bay Starts Extensive Exploration Program Along Coast Strip

By NEIL WILLIAMS

HOUSTON, Tex., Mar. 23.—Within the past several weeks the state of Texas has been awarding leases covering the major portion of Galveston and East Bays, together with a strip 3 miles wide on the Gulf of Mexico extending along the coast of Bolivar Peninsula. In Galveston and East Bays (the latter an eastern extension of Galveston Bay proper), a total of 184,451 acres has been open for bids. This takes in all the beds of these bays north of a line extending from Bolivar Point at the tip of Bolivar Peninsula across the bay to a point on the opposite shore of the mainland a few miles north of Texas City. In the Gulf of Mexico, along the coast of Bolivar Peninsula, leases aggregating 26,880 acres are being awarded.

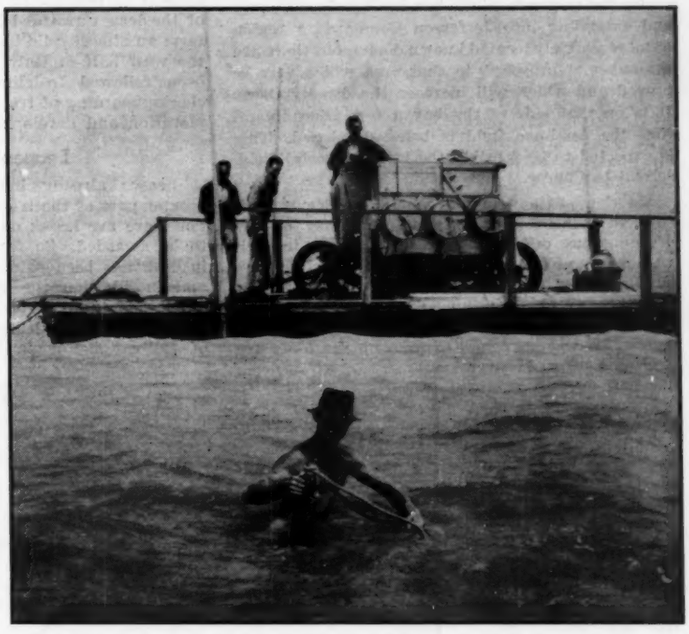
The only portions of the bays making up Galveston Bay not included are the upper end in Trinity and Turtle Bays, the extreme southern end known as West Bay between Galveston Island and the mainland, and a narrow strip across Galveston Bay proper held out by the state. The Trinity and Turtle Bay area was leased by the state last year in a separate offering. The West Bay area has not yet been put up for bidding. The narrow strip held out by the state was reserved to allow for correction of possible errors in measurements of tracts in which the bays were divided.

Altogether, there are approximately 325,000 acres in the various bays comprising Galveston Bay. That portion of Trinity and Turtle Bays leased last year covers 46,410 acres; the present offerings total an estimated 184,451 acres; the strip held out by the state is 23,235 acres, while the unoffered West Bay area will add 60,000 acres or more.

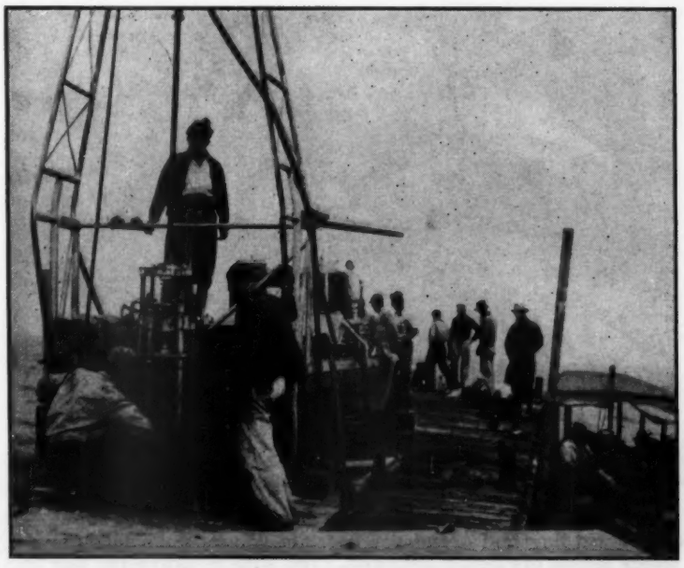
Leasing of these water beds not only opens a large virgin area for exploration, but also presents interesting speculations as to what can be expected in finding additional salt domes and opening fields. The geophysical exploration to be undertaken and the drilling of possible new fields out in the bay also will be watched.

Exploration and development of submerged lands and water beds is not new to Gulf Coast but Galveston Bay and its associated bays comprise possibly the largest single body of water in which such work has been undertaken, not considering the Gulf itself, in which some geophysical exploration and drilling has been done close to shore. In Coastal Louisiana a number of bays and large lakes have been exploited and salt domes and fields have been found. Texas Co. has been carrying on development for several years at a number of domes and fields in Terrebonne Bay and its adjacent and connecting water beds and marshes. Lake Pontchartrain, a large, shallow lake in southeastern Louisiana, recently has been worked with geophysical instruments and is under lease. The sounds off the coast of southeastern Louisiana have been held under lease from that state for several years.

Around Galveston Bay exploration for additional fields has stopped at the shore line. Leasing of the upper end comprising Trinity and Turtle Bays last year marked the first definite encroachment upon the bay. In those areas considerable geophysical work was done by Stanolind Oil & Gas Co., which has Turtle Bay and the major part of Trinity Bay under lease, and by Salt Dome Oil Co,. the latter heavily interested in a geophysical prospect on the north shore of Trinity Bay. At the north end of Turtle Bay, Stanolind recently opened a field, known as Turtle Bay, and is drilling out in the bay where part of the field is believed located. Goose Creek, one of the older fields, is partly in Tabbs Bay, a small neck of the extreme northern end of Trinity Bay leading into the Houston Ship Channel, but for the most part the work has been confined close to shore and on the landward side.



Seismograph instruments carried by barge showing setting of waterproof detector in bed of bay for recording of shots



Portable shot hole drilling equipment mounted on barge

Yet, there is every probability a number of salt domes, and possibly fields, exist out in the bay. There is no reason to assume a shoreline defines the limits of subsurface domal or structural conditions. Salt domes and fields and geophysical prospects encircle the land sides of Galveston Bay and its associated bays. The only reason the possibilities of additional domes and fields in Galveston Bay, or other submerged areas, have not been exploited before has been because there has been no particular occasion to do so. Companies, until recent years, have had ample reserves on dry land and in places more readily accessible and involving less costly exploration and development. Now there is need for new sources of petroleum for the future, these companies are concerned with the exploration of every available unexploited areas.

The leasing of Galveston Bay and additional sections of the Gulf of Mexico along the coast of Bolivar Peninsula, and preparations for exploration of these areas, mark further encroachment upon the water beds. For the past year more attention than ever has been directed to the possibilities of uncovering reserves in the water beds and submerged land areas yet unexplored which make up a large virgin territory for oil development. Steadily companies have been taking up more of such areas and extending development to them.

What the exploration of Galveston Bay holds in store naturally remains to be seen. However, under the law of averages, considering the acreage embraced in the water beds of that bay and its associated bays, there should be a number of good new domes and fields brought to light. The average density of salt domes on the Texas Gulf Coast is one dome to 89,000 acres. There are approximately 325,000 acres in the environs of these bays, and on the basis of the average density on the coast arithmetically there should be three or four domes in this area. In that portion of Galveston Bay, including Galveston Bay proper, Trinity Bay, Tur-

tle Bay and East Bay, leased or being taken up, there are 245,096. On the same basis there should be two or three domes in that area.

Of special interest is that the region immediately adjacent to Galveston Bay north and west, embracing Harris, Fort Bend, part of Galveston, northwestern Chambers and southern Liberty Counties, is of greater than average dome density. In that region the average density of salt domes is one to 53,000 acres. Assuming this density extends into Galveston Bay, as many as six domes can be expected in the entire bay area with four to five domes in that portion under lease or being leased.

On the east side of the bay in Chambers County and extending into Jefferson County is a region of more sparsely located known domes, but there are a number of prospects in that area which may be proved and which will increase the density there. It is on that side of the bay a few miles inland that the Anahuac field is being developed. This is expected to be possibly the largest coastal field, second to Conroe.

In view of the value of a dome or a deeply seated field such as Iowa, Hastings, Anahuac, or any of numerous others, one good discovery in Galveston Bay probably would be worth the cost many times over of the exploration for the entire bay and the development involved in the proving of the field. It is this incentive which has inspired companies and operators to take up the extensive acreage offered over the bay.

Leases to state-owned water beds are awarded on the basis of bids. The water beds are divided by the state into tracts, or units. Bids are made by tracts and any company bids on the tracts desired and any number of them. For the leasing of Trinity and Turtle Bays, last year, these water beds were divided into long strips, extending across the bays, there being 40 of these, varying from 370 to 1,880 acres. Stanolind Oil & Gas Co. was the successful bidder on all of Turtle Bay and the greater part of Trinity Bay. Some tracts in the latter bay went to Texas Co. and a few to other companies.

The area involved in the recent leasing of Galveston Bay proper and East Bay was divided into sections of 640 acres as far as possible. There are 236 tracts, totaling 151,040 acres. In addition there are 81 tracts of irregular shapes ranging from 300 acres to 1,183 acres. These are around the shoreline, where uniformity of lines was impossible. The state held out 23,235 acres, which consisted of a strip up the center of the bay in which there are 23 uniform tracts of 640 acres each, totaling 16,720 acres, and eight tracts of irregular sizes ranging from 677 acres to 969 acres, totaling 6,515 acres.

California Co. and Salt Dome Oil Co., jointly, through purchases by these companies and agents, and Humble Oil & Refining Co. have been the largest winners in the bidding. Humble so far has been awarded leases on more than 63,000 acres. California Co. and Salt Dome Oil Co. and agents of these companies have been awarded approximately the same amount of acreage. Other companies awarded leases so far include Texas Co., Sun Oil Co., Tide Water Oil Co., Amerada Petroleum Corp., Sinclair Prairie Oil Co. and Gulf Oil Corp. In addition there are a number of independents who may or may not be buying for one of the larger companies.

In awarding leases, the state has considered grouping of tracts so bidders might get as many awards as possible in large blocks. A large part of the leases awarded Humble Oil & Refining Co. form an almost solid block covering a large part of the west half of Galveston Bay. This policy has been followed to eliminate where possible the checkerboarding of tracts, which will facilitate exploration and development.

Leases Awarded

Leases already have been awarded on the greater part of the tracts offered. As this is written there are leases on fewer than 75 tracts left to be awarded. So far, approximately $2,000,000 in cash has been paid the state for these leases, and in addition the state is to get more than $17,000,000 in oil, if produced.

The strip being leased in the Gulf off the shore of Bolivar Peninsula has been divided into 35 tracts, each a half mile wide and extending into the Gulf a sufficient distance (3 miles) to make 960 acres. Every fifth tract, making a total of seven, has been held out by the state, the bidding being limited to the remaining 28. Salt Dome Oil Co., Stanolind Oil & Gas Co., Sun Oil Co. and Humble Oil & Refining Co. being among the successful bidders. Bolivar Peninsula separates East Bay from the Gulf of Mexico. On the peninsula between these bodies of water Gulf Oil Corp. and Sun Oil Co. recently leased large blocks following geophysical exploration.

The next step in the development of these waters will be geophysical exploration. Geophysical work in open water such as this involves no different technique than on land and can be accomplished without difficulty. The only thing different required is the use of boats and barges for mounting and movement of equipment. Salt Dome Oil Co. and California Co. are getting boat equipment together now for reflection shooting in the bay, and these operations should be under way within the next week. Turtle Bay and a large portion of Trinity Bay already has been worked. Independent Exploration Co. shot that area last year for Stanolind Oil & Gas Co., doing the work off boats and barges. Salt Dome Oil Co. also worked the area with torsion balance, fitting barges specially for this work. That was the first time torsion balance work had been done over water.

Water depths in these bays range from less than a foot up to 9 to 10 feet normally, although along the Houston Ship Channel the depths have been dredged much deeper. Exploration and development in water of such depth presents no particular difficulties, excepting in increased costs for foundations and boat equipment for transportation of equipment and materials. In fact, the shallower water around the shores present more problems than the deeper water out in the bay, where the movement of boats and barges can be facilitated. The various phases of drilling and development under such conditions have been discussed in previous articles. Operators now have the facilities for carrying on these operations in the event of discovery of salt domes and structures in the bay waters.

Map of Galveston Bay and associated bays and adjoining land areas showing salt domes and fields. In Galveston and East Bay and along the coast of Bolivar Peninsula the sectionized area indicates where leases are being awarded. The strip in Galveston Bay and the strip off the coast of Bolivar Peninsula reserved by the state are indicated

Tulsa Accountants

The March meeting of the Petroleum Accountants Society of Tulsa will be held Friday, March 27, in the Winter Garden of the Mayo Hotel at 6 p.m. There will be a discussion conducted by J. M. Flaherty, Shell Petroleum Corp. on "Methods of Accounting Procedure," and a discussion by H. H. Powell, manager of International Business Machines Corp., on "Application of the Punch Card Method in the Oil Industry."

Geologists Discussed Many Theories at Annual Meeting Held in Tulsa

By L. G. E. BIGNELL

Tulsa was host to the members and guests of the American Association of Petroleum Geologists and associated societies last week at one of the outstanding annual meetings of these groups with a record breaking attendance and with a very wide range of subjects covered in more than 120 papers presented during the three days' session. Many were unable to attend because of pressing duties elsewhere, indicating the very general activity of the geologists and allied scientists at this time in the search for new reservoirs of crude oil.

Prior to the regular sessions on Thursday there were many meetings of committees held on Tuesday and Wednesday and much of the detailed business was handled and new plans formulated for the work to be carried on this year. On Wednesday evening after an informal dinner the Research Committee conducted an open meeting during which many new ideas for advanced research work were discussed. This meeting was well attended and the interest shown indicates very clearly the trend of thought of the geologists during this period of intensive search for oil.

Presidential Address

At the opening of the meeting Thursday morning the retiring president, A. Irving Levorsen, delivered his presidential address entitled "Stratigraphic vs. Structural Accumulation" printed elsewhere in this issue of The Oil and Gas Journal. Mr. Levorsen has outlined in this very interesting paper ideas concerning the location of future oil pools which differ in some details from the long accepted structural trap theory.

In the past, effort has been largely directed toward the discovery of domes and anticlines and other local deformations as traps for oil and gas based largely upon the theory outlined by Dr. I. C. White in 1883. This system of discovering new oil pools has been satisfactory and adequate to maintain a supply of oil up to this time. New discoveries have been fewer in recent years and demand has increased and Mr. Levorsen pointed out new methods must be employed in the search for reservoirs if the annual demand for 1,000,000,000 bbls. of oil is to be satisfied.

In a study of the oil fields opened thus far it has been found that about one-fourth of the oil has come from reservoirs of the stratigraphic trap variety. Those oil pools were not found by following the accepted geologic methods for exploration but rather from wildcatting and by chance. However now found they offer the geologists an excellent opportunity to study this type of reservoir and to determine procedure to be followed to uncover similar pools which Mr. Levorsen thinks will supply the needed new oil for the future.

"As each method of structure hunting was developed," said Mr. Levorsen, "it provided a sufficient number of new fields for exploration so that the current petroleum needs were met. We have all, therefore, drifted along from one structure-finding method to another until now we are apparently approaching the real danger of an oversupply of methods and an undersupply of anticlines."

More than 900 persons were gathered to hear Mr. Levorsen's address and many favorable comments were heard from geologists.

The great array of papers presented showed careful preparation and the discussion following most of them was of a very constructive nature. Practically all parts of this country and some of the oil bearing provinces abroad were discussed as well as many deeply technical subjects of particular interest to the active geologist, geophysicist and paleontologist.

Recent Developments

On Friday afternoon a symposium of recent developments was held and review of the work done during the past year in many states and in some foreign fields was given. Howard S. Bryan, Skelly Oil Co., Wichita, Kans., said there had been 49 new discoveries in that portion of Kansas west of Wichita of which 46 were oil and 3 gas. There were also six new oil discoveries opened in eastern Kansas during the same period. This work has been done following intensive geophysical exploration of the west Kansas area and during last year there were an average of 12 crews at work each month at an average cost of $9,000 per month. Core drilling was also resorted to in many areas and in some instances a combination of core drilling and seismographic exploration preceded the drilling of the wildcat wells.

Oklahoma

Edward F. Shea, Stanolind Oil & Gas Co., Tulsa, followed with a resume of the Oklahoma

OUTCROPS

Geologists must find a billion barrels of oil yearly in United States.

Maximum employment of petroleum geologists reflects wide spread efforts to find new fields. Shortage of trained men for special phases of geological work.

California not menacing to industry generally due to lack of important new fields for future development. New reserves established during past year total only 10,000,000 barrels or 5 per cent of requirements. Similar situation in 1934.

Latest developments in stratigraphic methods of geological exploration afford opportunity to open up new reserves and offset the diminishing supply of structural accumulations.

Salt deposition in the Permian Basin extends into Panhandle sections of Texas and Oklahoma and western Kansas from New Mexico and West Texas. Adds to attractiveness of this large area from standpoint of possible oil production.

Intensive study of Oklahoma-Kansas coal basin by U.S.G.S. scientists based on carbon ratio gives valuable data to oil geologists for that area.

Six different sand horizons have been found in new Paleontological zone in the High Island Salt Dome of Galveston County, Texas. Crude of field of three types varying in gravity from 24° to 44° A.P.I. Possibilities in other domes of the Gulf Coast area.

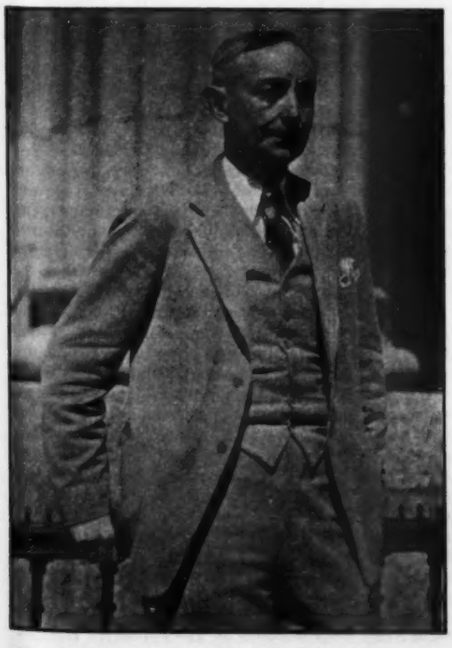
Encouraged by 100,000,000-bbl. Fitts field oil men directing attention to similar production in Southern Oklahoma.

Report on structural history of the Ozark Uplift does not point to commercial production in Southern Missouri.

Study of modern and offshore bars gives geologists better understanding of oil accumulations in the so-called shoe string oil fields of Northeastern Oklahoma and Southeastern Kansas and may lead to opening of new pools.

New extension pools found in several foreign countries which will be developed in 1936. No wildcat discoveries of major importance.

Discoveries so far in Michigan have been largely in limestone formations with oil recovery per acre relatively small.



OPTIMIST FROM CALIFORNIA—George C. Gester: "West Coast conditions look better"

BROAD SUBJECT—M. G. Cheney and L. W. Orynski discuss West Central Texas

activities and stated 32 discoveries were made in this state last year with 225 wildcats drilled in 37 of the 77 counties. This compares with only 150 wildcats drilled during 1934. Already in 1936 eight additional discoveries have been reported in Oklahoma. Of the 225 wildcats drilled, 51 were financed by the major oil companies and 17 discoveries resulted, while the independents handled the other 174 wildcats and made 15 strikes. Of

OKLAHOMA OUTLOOK—James H. Gardner expects development of California type fields in Sooner state

the 17 discoveries made by major companies, the area had been previously mapped by surface, subsurface, core drilling and geophysical methods.

Michigan Operations

The developments in Michigan was covered in a very able manner by Theron Wasson, Pure Oil Co., Chicago, Ill., who stated the state has thus far produced about 55,000,000 bbls. of oil and new discoveries are being made from time to time. This oil has practically all been produced from the limestones and the use of hydrochloric acid in well completions has been a common feature in the drilling program. Mr. Wasson showed slides of sections of this limestone which clearly indicated the type of pores and explains why acid is so effective in increasing rate of recovery and in many instances ultimate recovery.

The outstanding strike in 1935 in Michigan was the pool in Crystal Township discovered last March, and as Mr. Wasson explained, it has since been fully developed, reached its peak of production and is now definitely on the decline.

On the Gulf Coast

Orval L. Brace, of Houston, Tex., gave a very complete review of the work done last year along the Texas and Louisiana Gulf Coast and discussed the new discoveries by stratigraphic position rather than by geographical location. The present very active areas are near Galveston and in Chambers County. These "hot spots" of activity are common to the Gulf Coast and any new strike there causes the start of many new wells in the vicinity and the work continues until the extent of the area is proven.

Things move so fast in Southwest Texas, discussed by Harry H. Nowlan of San Antonio, Tex., that four new discoveries and 43 new drilling operations were reported between the time he prepared an abstract of his paper for the official program and its presentation. This means that between March, 1935 and 1936, there were 51 new discoveries made in the San Antonio area consisting of 29 new pools and 22 additional new sand discoveries in old and new pools. These discoveries range in depth from 700 to 7,500 feet and are scattered from the southwest coastal region to Frio County and up through the Balcones fault line region. No new discoveries are reported from the southern counties in the West Texas Permian basin region, although many wells have been and are now being drilled there.

Eastern Texas

The eastern portion of Texas was discussed by Wallace Ralston, of Tyler, Tex., who pointed out the progress made last year in the opening of new reservoirs in this region, and while the number of new fields opened is not impressive, much has been learned of the subsurface conditions of the Woodbine basin area and it is believed this knowledge will be put to profitable use during the near future. The discovery at Talco, in Titus County, while made very recently, is of importance, and likewise the extension of the Rodessa field from Louisiana into eastern Texas may cause extensive drilling for Trinity sand production in the eastern part of Texas.

North Central Texas

This review of developments was continued to Saturday afternoon when Robert Roth, of Wichita Falls, Tex., discussed North Texas in a brief paper and was followed by Harold W. Hoots, of Glendale, Calif., covering California. Only 10,000,000 additional barrels of oil was added to California reserves during 1935 according to estimates supplied by Mr. Hoots. No new fields have been recently discovered by the use of geophysical methods in California principally because the structures so mapped did not contain oil or gas in commercial quantities. Much of the new reserve built up last year comes from new zones opened in old fields.

New Mexico

West Texas and Southeastern New Mexico were discussed by Dr. Hal P. Bybee, of San Angelo, Tex., and he pointed out as an encouraging sign the fact that storage of oil in that area had been reduced by about 1,156,782 bbls. during the last year while the pipe line runs in 1935 increased a total of 7,736,069 bbls. over runs in 1934. Production of oil has increased in the area with 1,038 new wells drilled an increase of 30 per cent over 1934. This all indicates the trend of increased interest in West Texas and New Mexico oil and prophesies increased production and drilling in 1936.

New Theory

One paper of outstanding interest was next presented by Dr. James H. Gardner of Tulsa on Southern Oklahoma orogeny and structural trends of the Wichita, Arbuckle, and Ouachita areas of

UNCLE SAM'S PALEONTOLOGIST — Dr. E. O. Ulrich gives John Fitts advice on Arbuckle

Oklahoma and adjacent Texas areas. This paper covers a new conception of the general geology of this region and was very interesting and followed by lively discussion by many geologists about evenly divided as to the merits of the ideas presented by Mr. Gardner.

Election of Officers

On Saturday morning a report of the various executive committees was made and the results

KANSAS BOOSTER—Marvin Lee thinks low development costs, short time leases and no production tax are inviting

of the election announced. Dr. Ralph D. Reed, chief geologist for the Texas Co. in California was made president of the A.A.P.G. and C. E. Dobbins, U.S.G.S., Denver, Colo., defeated Jerry Newby of Oklahoma City, Okla., for the vice presidency, the only contested office. Charles H. Row, Sun Oil Co., San Antonio, Tex., is the new secretary-treasurer and Dr. L. C. Snider, Cities Service Co., New York City, was reelected editor. The executive committee is completed by past president I. A. Levorsen who serves for the next year.

Paleontologists and Geophysicists

While the technical sessions of the A.A.P.G. were going on in the Mayo Hotel the division of Paleontology and Mineralogy and division of Geophysics were holding sessions at Hotel Tulsa and in the University Club. Many important papers were presented at each of these meetings but they were of a highly technical nature in most instances and of interest principally to those scientists specializing in these branches of geology.

The geophysicists elected Dr. L. W. Blau of Houston, Tex., as president, and Gerald H. Westby of the Seismograph Service Corp., of Tulsa, vice president, with John H. Wilson of Colorado Geophysical Corp. of Denver, Colo., secretary-treasurer. F. M. Kannenstine of Rosaire and Kannenstine of Houston, Tex., was reelected editor for this group.

The Society of Economic Paleontologists and Mineralogists elected Merle C. Isrealsky of Houston, Tex., as president to succeed W. T. Twenhofel of Madison, Wis., and the other officers are Reginald Harris, of Norman, Okla., vice president; Gayle Scott, Fort Worth, Tex., reelected secretary-treasurer, and Raymond C. Moore of Lawrence, Kans., continues as editor.

Field trips to the Arbuckle Mountains and the Fitts pool with the dedication of a monument to the memory of the late David White at Ada, Okla., on Sunday afternoon concluded the activities. The monument to Dr. White is a fossil of a hugh Calizylon, a tree-like plant which grew in Oklahoma about 300,000,000 years ago, when the area was covered by the last great seas.

The official registration was 1,784. Los Angeles, Calif., has been selected by the executive committee as the next year meeting place, but the exact dates in March have not yet been announced.

Clandestine Reclaiming of Crankcase Oils Proving Serious Encroachment

By C. O. WILLSON

NEW YORK, Mar. 23.—How much of their motor oil market are New York oil companies losing to reclaimers of crankcase oils?

Many have endeavored to arrive at an answer to this question but few are willing to hazard a guess as to the volume of this business carried on for the most part in a clandestine manner. Based on some reports it has the earmarks of being a major enterprise in a city where rackets have become so serious a special state investigation is now being conducted in an effort to end their widening encroachment on legitimate business.

It is estimated the metropolitan area which includes the adjoining sections of New Jersey, Conn., Long Island and Westchester County as well as New York City consume at least 50,000,000 gallons or 200,000,000 quarts of motor oil annually. Based on a 25 cent per quart retail price this is a $50,000,000 market. If the oil companies are permitting the reclaimers to have 10 per cent of this market they are losing $5,000,000 yearly and if it amounts to 20 per cent, as some claim, their loss is $10,000,000. If similar situations exist in other metropolitan centers the total loss to the industry is much greater. It may be one of the explanations why motor oil demand is still less than 90 per cent of the 1929 peak despite the fact gasoline demand in 1935 was more than 12 per cent greater than in 1929.

Inquiries among oil distributing companies regarding the operations of the reclaimers elicit little definite information. It seems to be one of those things everybody knows about in marketing circles but even your best friend does not talk about. There is also an attitude that if there is anything wrong it is the fault of other companies.

Large Scale Substitution

It will be recalled that about a year and half ago an automobile association sponsored tests of motor oils in part of New York City and reported a large percentage of oils tested did not possess the properties of the branded oils for which they were sold. This indicated a substitution evil on a large scale. The accuracy of the investigation as reflecting a general condition was attacked by several oil companies.

About that time the New York office of The Oil and Gas Journal began to have numerous inquiries from local residents seeking information regarding the possibilities of this new business of reclaiming used motor oils. In most cases the inquiries came from people who knew nothing about oil refining or marketing but who had heard there was an opportunity for large profits with little investment required.

Curiosity was increased after obtaining information first hand on one operation. This incident is related here because of the information it gives covering one type of reclaiming operations.

In driving along a boulevard in the metropolitan area we noted a small refinery which had been the basis of a promotion effort in the late twenties, appeared to be operating. Smoke, steam and a large new sign carrying the name of a refinery company were the indications. We stopped at the plant expecting to obtain information on a new refinery operation. The day was cold and so was the reception. Before leaving we observed fire under a couple small shell stills and also detected, without difficulty, a vile odor.

This odor had so incensed the neighborhood that we were able to pick up the following facts regarding the operation in a short time. A stream of trucks carrying crankcase and reclaimed oils was going in and out of the plant day and night. The incoming trucks in most cases had open barrels of used oils which they picked up from all types of service stations over a wide area.

The oil was either given to the truck operators or they paid a cent a gallon for it. Some drivers had tank-wagons and used large tanks instead of barrels to transport the oil. The odor was due to the delivered oil often carrying extraneous material which the plant operator did not discover until he started his reclaiming operation.

No Guarantee

Apparently it was never necessary to make any guarantee as to the quality of the used oil sold to this particular reclaiming operator. One case was reported in which a filling station attendant was asked to look at several barrels of oil before it was delivered to the plant. It did not look any different from the usual black crankcase oil but the truck operator confided it was waste material from a Brooklyn ink factory. Another truck operator was accustomed to use the water hose at a nearby station in filling his barrels to within an inch or two of the top. He would stir the barrels with a paddle and then drive quickly to the plant and dispose of his emulsion before the water had time to settle out of the oil.

Other trucks and cars came into the plant and picked up loads of the reclaimed oils, usually in drums. The price paid was said to depend on the quality of oil and the status of business—prices being lowered when business was dull. The prices at the plant ranged from 10 to 20 cents per gallon. The buyers then departed to all parts of the metropolitan New York to dispose of their oils to station operators, garage owners and other sellers of finished motor oils.

The reclaiming operation at this particular plant consisted in driving off the light petroleum fractions and water by distillation followed by some kind of chemical treatment which facilitated a later crude filtering operation. The properties of the oils received at the plant varied widely and this variation also was apparent in the tests of the reclaimed oils.

Since that time an effort has been made to obtain additional information regarding the scope of the operations of these reclaimers. No one appears to have complete information covering any phase and several frankly stated they had enough troubles directly connected with their jobs without worrying about something over which they assumed they had no control. There is nothing to indicate employes of the major oil companies or smaller marketing concerns are involved in a financial way in these reclaiming operations. The reported cases are confined to jobbers and dealers.

The basic cause of the trouble rests in the matter of disposing of used motor oil after it has been taken from the crankcase of motor vehicles. The ordinances forbidding dumping of oil in sewers are strictly enforced. It is expensive to collect the oil and take it to some central point for disposal. One large company does this in the case of its stations and its controlled dealer accounts. Other major companies point not only to the expense of collection but also hesitate to adopt such a policy fearing it would result in reports they reclaimed the oil and resold it under branded names.

In some cases the oil is sold or given to concerns who are supposed to use it as fuel. The reclaimed oils can easily be blended off with regular fuels and burned under boilers. To protect themselves oil companies in some instances have required contracts and bonds from buyers to use the oils for fuels. These bonds have not prevented some buyers from disposing of part of their oil to reclaimers.

Other companies leave disposal of crankcase oil to the dealers. They know these dealers are selling or giving the oil to concerns that reclaim it, but they do not see what they can do about it. They express confidence the sale of the used oils is not affecting their own sales because they take special precautions to prevent substitutions in the sale of branded products.

Guarantee Against Substitutes

In this connection emphasis has been placed on the desirability of having all motor oils sold in quart or larger cans as a check against sale of reclaimed oils. This guarantee against substitution has been the factor around which sales of canned oils have been built up over the past four years. Some marketing executives, however, have never been completely convinced as to the desirability of confining sales of motor oils to packages. They point out the additional canning operation adds 10 to 20 per cent to the cost of the oil before it leaves the refinery. It adds nothing to the value of the lubricant and the increased cost strengthens the position of competitors selling reclaimed or any other cheap oil. These cheaper oils have also been canned and sold in retail markets, a business which may be easily expanded.

There are reclaiming operations carried on in a legitimate manner. Some of the larger bus and taxicab companies have reclaiming operations of their own. They remove the oil from the crankcases of their buses and cabs at stipulated periods and run the oil through a reclaiming operation. The light ends of the oil coming from the gasoline dilution is distilled off and part of the dirt and other extraneous material is also removed. The original properties of the oil are not obtained in this operation but the oil is sufficiently reclaimed so the life of the oil is extended. Under controlled conditions of this kind there are possible savings, and oil companies do not attempt to discourage these operations.

Another case is cited in which a company operates at least one large reclaiming plant. This company collects oil under contracts from several hundred sources. After the oil is reclaimed it is sold as reclaimed oil by the company with guarantees as to its properties. This concern reclaims oil for some large commercial car operators, who blend the reclaimed oils with fresh oil and claim a substantial saving.

Gulf Coast Issue

of The Oil and Gas Journal will be published April 16. To be sure of a copy, order it early from your newsdealer!

Pipe Line Activity

Atlantic Survey to Rodessa Is Completed; Work Delayed

SHREVEPORT, La., Mar. 23.—The Atlantic Pipe Line Co. has temporarily set aside its plans to lay an 8-inch welded line from Rodessa, La., to its main pumping station in the East Texas field south of Longview in Gregg County, Texas. Survey has been completed, and the line may be laid later. At the present time there is a greater outlet than the field is producing under partial proration schedules, which was the main reason for the Atlantic abandoning its plans at present.

East Texas Refining Co. is nearing completion of its 8-inch welded line from Rodessa to its refinery at Longview, East Texas. It is expected to be in operation by April 1. The company has posted a tariff effective March 25 of 12½ cents per barrel from Rodessa to Longview. Two booster stations are being erected. One at Jefferson has been finished and one at Rodessa begun. This company will take 5,000 bbls. daily from Pelican Oil & Gasoline Co. at Rodessa. The tariff is 12½ cents per barrel from Rodessa to Longview.

Standard Pipe Line Co. is now running over 24,000 bbls. daily. Gulf Pipe Line Co. is taking over 12,000 bbls. daily and the Magnolia Petroleum Co.'s line completed last week will handle 7,000 bbls. daily for the present. Magnolia line is tying into United Gas Public Service Co.'s Ardis lease in section 14-23n-16w, on which there are four producers and Bartex Pipe Line Co. and R. W. Norton, and Lion Oil Refining Co. and No. 1 Wynn, east outpost, are expected to be Magnolia connections. Standard Pipe Line Co. has over 60 connections, Gulf has about 30 and Griswold Refining Co., which has begun operation of its 5,000-bbl. topping plant at Rodessa, has about eight.

Texas Pipe Line Co., Arkansas-Louisiana Gas Co. (Cities Service), and Shoreline Oil Co. are preparing to begin work on lines to Rodessa.

Shoreline Oil Co. is stringing 4-inch pipe from its refinery at Lewis, Caddo Parish, to Rodessa, Arkansas-Louisiana Gas Co. has laid 83,000 feet of its 90,000-foot 8-inch welded line from Oil City to Rodessa.

East Texas Lines

FORT WORTH, Tex., Mar. 23.—American Liberty Pipe Line Co. has nearly completed its connecting link between the Conroe field in Montgomery County and the Rusk station in Cherokee County of Liberty Pipe Line Co., which will give the company a direct outlet from the East Texas field through the Conroe field to Gulf Coast terminals.

The Solvex Pipe Line System and the Gilliland Pipe Line System are undergoing a general consolidation which will give the new organization a system of lines extending throughout the north and south portions of the field, from one end to the other.

Lincoln Parish Line

SHREVEPORT, La., Mar. 23.—When Marr, Greer and Lide No. 1 S. Gardner, north offset to No. 1 Fowler discovery gasser, section 10-17-4, Lincoln Parish, is completed, Arkansas-Louisiana Gas Co. plans construction of a 10-inch line to the area, it is reported.

The line, for which right of way has been purchased, will connect into the company's Monroe-Shreveport main line at section 21-19-4, about 11 miles to the north.

Bids on Detroit Line

NEW YORK, Mar. 23.—The Michigan Transmission Corp., subsidiary of Columbia Gas & Electric Corp., New York, has asked for bids upon the laying of 220 miles of 22-inch gas line from the Indiana-Illinois state line to Detroit, Mich. This project contemplates securing gas from the line of the Panhandle Eastern system and deliverying it to Detroit and vicinity. The contract will probably be let some time this week and work started promptly. The Michigan Transmission Corp. has headquarters in Pittsburgh, Pa., and Kansas City, Mo., and the details of the system were worked out in Kansas City then taken to the Pittsburgh office for check and finally to the New York headquarters for the final signing of construction contracts.

Michigan Gas Lines

MUSKEGON, Mich., Mar. 23.—The Memphis Natural Gas Co., of Tennessee, has presented a proposal to lay a line to Grand Rapids. Though the proposal was taken under consideration by the Grand Rapids city commission, Chairman Smith said the state commission had eliminated all other concerns than the Grand Rapids Gas & Light Co. Consumers Power Co. is completing a 70-mile line of 10-inch pipe to Lansing at a cost of more than $500,000.

Natural Gas

Texas Natural Gas Production and Utilization in January

The first monthly summary of gas production and disposition in the state of Texas for the month of January, compiled at the direction of the Railroad Commission of Texas, states that from the 205 gas reservoirs in the state, the various pipe line companies, gasoline plants and operators produced 2,068,303,000 feet of gas daily during the month. This daily figure represents 6.8 per cent of the total state potential. Heavy production in the Panhandle area served to distort the withdrawal rate for the state, since the average for districts outside this area was approximately 4 per cent.

Of the total amount of gas withdrawn from the entire state, the report states, 44.3 per cent was utilized for light and fuel purposes. This low percentage was mainly due to stripping of gas to the air and resale for industrial and other purposes, not revealed by reports, in the Panhandle.

During the month 606,779,000 feet of residue gas daily was purchased from gasoline plants by companies manufacturing carbon black, the gas being burned in 33 plants, 29 of which were located in the Panhandle district. Thirty-one of the reporting plants produced 852,222 pounds of carbon black daily, or an average of slightly more than 1.41 pounds per 1,000 feet of gas processed.

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Gulf Refining Co. pipe line division's 8-inch welded line from the company's tank farm in the Hendricks field, Winkler County, Texas, to Lea County, New Mexico. Using air hammer to drill holes and place dynamite for blasting the caliche in the ditch

New Michigan Wells

MUSKEGON, Mich., Mar. 23.—Three new gassers added 68,400,000 feet daily in the Millbrook-Hinton-Belvidere Township field, Mecosta and Montcalm counties, Mich., last week. Superior Drilling Co. No. 1 L. B. Smalley, C SE SE section 3-12n-7w, Belvidere, struck 35,000,000 feet, the company's third gasser of 30,000,000 feet or more in the Michigan Stray sands.

Another 30,000,000-foot well was completed by Refiners Petroleum Co. in No. 2 George S and Olive Townsend, C SE NW section 11, same township, Michigan Stray was topped at 1,229 feet, and the well was completed at 1,251 feet.

The Millbrook Township section, now the state's largest with an open flow capacity of more than 750,000,000 feet from more than 50 wells, added a small well making 3,400,000 feet initial; Midland Petrol Corp. No. 1 C. R. and I. Miller, C SW SE section 34-13n-7w, which topped the Michigan sand at 1,284 feet.

Gas Property Sale

MUSKEGON, Mich., Mar. 23.—The Michigan Exploration Co. of Muskegon, has announced sale of its assets in Belvidere Township, including three 5,000,000-foot wells, 30 proved locations and 2,900 acres of leases to the Securities Investment Corp. of Grand Rapids.

Oklahoma Natural Gas Co.

Directors of Oklahoma Natural Gas Co. have approved the plan of refinancing proposed by Stone & Webster and Blodget, Inc., and have mailed to stockholders proxy blanks for a special meeting on April 15 for voting on the plan and authorizing new securities.

Refinery Projects

Leonard Refineries to Install New Cracking Unit at Alma

MUSKEGON, Mich., Mar. 21.—Contracts for the new Dubbs cracking unit to be installed by Leonard Refineries, Inc., are to be closed within a few days. Leonard Refineries was recently incorporated under Michigan laws, the setup of the new organization linking the crude oil production of the J. W. Leonard, Jr., Trustee Group, the Rowmor Corp., John F. Martin, Inc., and the McClanahan Oil Co. with the processing and marketing facilities of McClanahan Refineries, Inc., and Acme Refining Co. of Alma. McClanahan Oil Co., McClanahan Refineries, Inc., the Leonard production group and Leonard Refineries retained their separate entities.

The Leonard refinery at Alma will be of 3,500 bbls. daily capacity with 1,500 bbls. cracking capacity. Storage tanks are already being filled with crude from the Crystal wells of the Leonard interests preparatory to starting skimming operations on or before April 1.

Onyx Adds Equipment

The Onyx Refining Co., operating an 800-bbl. refinery at Abilene, Tex., is making general improvements to its plant and has purchased equipment for the installation of a cracking unit.

Canadian Storage Plants

EDMONTON, Alberta, Mar. 21.—North Star Oil, Ltd. of Winnipeg has secured a site for an oil storage plant to be erected at a cost of $40,000.

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VANCOUVER, British Columbia, Mar. 21.—Standard Oil Co. of British Columbia, Ltd. will erect tanks and other storage equipment at Hastings Mills at a cost of more than $30,000.

Fire destroying the Pittsburgh, Pa., refinery of the Waverly Oil Works last week. The plant, which was one of the oldest in the Pennsylvania area, had a rated crude oil capacity of 1,500 barrels daily and was complete in its operations

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Natural Gasoline

Gasoline Absorption Plant

CALGARY, Alberta, Mar. 21.—British-American Oil Co.'s natural gasoline absorption plant in South Turner Valley adjoining the High-Sarcee lease is under construction and will be completed by the latter part of May. The plant when completed will have a capacity of 60,000,000 feet of gas daily and will cost approximately $250,000.

Pelican Natural Gasoline Plant

SHREVEPORT, La., Mar. 23.—Construction work on the Pelican Oil & Gasoline Co., Inc., gasoline plant located on the Sexton lease in Rodessa field, Caddo Parish, Louisiana, is now well under way and is expected to be completed by the latter part of April. The plant is of the absorption type with a daily capacity of 50,000,000 feet of gas and is expected to have an output of approximately 80,000 gallons daily. Estimated cost of the plant is about $200,000. Frick-Reid Supply Corp. of Tulsa received the contract for construction of the plant in its entirety, erection being done by Mattison-Wallack & Co. of Oklahoma City.

Warren Petroleum Celebrates

This week the Warren Petroleum Co. of Tulsa is receiving visitors in its new offices in the National Bank of Tulsa Building to celebrate the company's fourteenth anniversary. Beginning in 1922 as a medium for buying and selling natural gasoline, the company has expanded steadily until it now handles the regular output of 58 plants.

The list includes the six owned plants recently acquired from Amerada Petroleum Corp. Four have a capacity of 30,000 gallons a day and its subsidiary, Natural Gasoline Corp., operating a new plant at Monument, N. M., and has a capacity of around 60,000 gallons daily. With F. W. Dye the firm owns the American Natural Gasoline Co. plant of 60,000 gallons capacity at Ramsdell, Tex., and it and J. E. Crosbie, Inc., own an 8,000-gallon plant in the Fitts field and a 12,000-gallon plant near Holdenville, Okla.

Texas Production

During January 110 natural gasoline plants operating in Texas processed a total of 682,951,000 feet of casinghead gas, 1,110,568,000 feet of sweet gas, and 515,660,000 feet of sour gas daily; the total intake volume being 2,309,146,000 feet per day. From the total intake volume, these plants recovered 1,499,181 gallons of natural gasoline daily, an average of .649 gallon of gasoline per 1,000 cubic feet of gas.

The greatest volume of gas processed was reported by the 43 plants which operated in the Panhandle aren. West Texas reported 31 gasoline extraction plants, and East Texas with 14 plants was the third most important section in the production of gasoline from natural gas.

Of the total processed daily, 133,651,000 feet was accounted for as lost during extraction, 302,389,000 feet was used for plant and lease purposes, 606,779,000 feet was sold to carbon black plants, and 595,128,000 feet was disposed of to pipe lines. A small portion of the remaining volume was utilized for repressuring purposes, and the remainder, 664,660,000 feet daily, was blown to the air.

These figures are taken from the monthly summary of natural and casinghead gas plants and disposition report for January compiled at the direction of the Railroad Commission of Texas. This report is designed to determine the current status of the industry and to reveal any significant trends which may be of value to it and to the commission in the adaption of rules and regulations for the prevention of waste. In abbreviated form this report is published monthly and will be available at the office of the engineering department in Austin.

Panhandle Carbon Hearing

AUSTIN, Tex., Mar. 16.—At a railroad commission hearing operators of carbon black and gasoline extracting plants in the Panhandle protested classification of certain wells as gas producers.

E. C. Smith, Buckeye Gasoline Co., testified if wells were classified as gassers and production restricted under proration, its carbon black and gasoline extraction plants would be compelled to shut down. He testified the gasoline plant, operating on 50 per cent capacity, used about 15,000,000 feet daily, and the carbon black plant 8,000,000 feet. Similar testimony was given by Carl Gilmore, Aeroline Gasoline Corp., and H. L. McLaughlin, Piney Oil & Gas Co.

Texas Gas Income

Gross income of gas utilities operating in Texas during 1934 amounted to $71,952,031,000, according to a report just released by the gas utilities division of the Texas Railroad Commission covering activities of all gas utilities in the state. Domestic meters in the state numbered 527,381 and there were 6,487 industrial meters. Used for transporting natural gas were a total of 12,725 miles of pipe lines. Rates now in effect over the state range from 25 cents to $2 per 1,000 for the first 1,000 feet.

Texas Allowable

AUSTIN, Tex., Mar. 24.—The Railroad Commission fixed the daily allowable for East Texas for April at 2.85 per cent of one hour's potential, approximately 444,000 bbls. daily. Total or state 1,147,500 bbls., compared with 1,110,000 bbls. for first of March.

Trend of Natural Gas Discussed Before Utilities Association

The eighteenth annual convention of the Oklahoma Utilities Association was held in Tulsa, March 23 and 24 with more than 450 in attendance from all parts of the state.

The association was reorganized last year when the telephone group withdrew leaving only the gas and electric power groups to make up the organization. The association headquarters are in Oklahoma City and C. A. Breitung, vice president and Oklahoma manager of the Southwest Gas Utilities Corp., Ada, Okla., is president. J. P. Arnold of the Public Service Co. of Oklahoma, Tulsa, is first vice president and J. Y. Wheeler, state manager, Community Natural Gas Co., Wynnewood, Okla., is second vice president. W. R. Emerson, vice president and treasurer of the Oklahoma Gas & Electric Co., Oklahoma City, Okla., is secretary and treasurer. This group forms the executive board.

There are two divisions in the association, the electric and gas, and they in turn have governing boards. The electric division board is made up of Glenn C. Kiley, Oklahoma City, Okla.; W. B. Head, Jr., Sand Springs, Okla.; J. F. Owens, Oklahoma City, and Fred W. Insull, Tulsa, Okla.

The gas division board consists of Jennings Young, Tulsa; B. F. Pickard, Tulsa; W. L. Woodward, Alva, Okla., and A. F. Potter, Bartlesville, Okla. Division officers are Glenn C. Kiley, chairman electric light division, and Jennings Young, chairman gas division.

Tuesday's session was called promptly at 9:30 and Frank B. Long, vice president of the Oklahoma Natural Gas Co., Tulsa, gave a paper on "The Trend of Natural Gas" and said in part:

"Discussion of the natural gas business in this year 1936 would not be complete without direct reference to electric current, fuel oil and petroleum coke competition. Not only must the natural gas man strive to prevent further waste, but he must be more alert than ever before as a salesman. Efficiency of plants generating electric current has increased to a point where electric ranges and hot water heaters are being offered on an attractive basis. Oil refineries of yesterday are obsolete today. Fuel oil and petroleum coke, manufactured from crude oil lifted by Oklahoma and Texas gas, and with that same gas for fuel under the new 1935 model stills, are seeking new markets. The fuel oil man is a salesman. Natural gas is just the same gas it was 50 years ago. The B.t.u. content hasn't changed. Appliances have improved in quality and efficiency. And this year is the year for the distributor of natural gas to prove to his customers that he offers the perfect fuel at a price and on a basis that will meet all competition.

"If time permitted, I would delight in recalling to your minds the tremendous advance which has been made in the last five years; efforts now being made to bring about flameless combustion, which, when achieved, will unquestionably successfully crack natural gas to a point where gas will be worth $45.00 instead of 45 cents per 1,000 feet; and liquid gas, gas refrigeration, new and improved gas engines, and, finally plans for pumping tailhouse or residue gas from gasoline plants back into depleted fields.

"Natural gas engineers and technicians are doing a 100 per cent job. We must follow them. The recent scholastic and collegiate courses in natural gas offered by some of the major companies have contributed immeasurably to a more thorough understanding of this precious fuel. Producers and transporters are operating on a more commonsense basis than ever before. Pipe lines are in the ground; distributing systems are functioning efficiently. There yet remains definite solution of the problems of conservation.

"If this natural gas business can escape further regimentation, not be too severely punished by federalization, and continue sincerely and honestly its efforts for conservation, then, in truth and in fact, we will have entered the 'Gas Age'.

"The natural gas man can never 'rest upon his record'. He can point with pride to his achievements last winter, but he dare not attempt to hazard a guess on next winter. No regular rains will replenish his supply. He cannot fill his depleted storehouse with power from fuel-supplied turbines. His is essentially and necessarily a business of tomorrow; and tomorrow is always winter after next. The gas man must maintain and preserve and be dead sure of his reserves. In order to be prepared for this inevitable tomorrow, your gas company, and mine, must have cash with which to control (and control is not too strong a word) and own adequate and sufficient reserves. I believe, sincerely and conscientiously, that every natural gas company should be authorized to maintain a rate schedule sufficient to enable it to set aside, in cash, an amount equal to 10 per cent of its property value, this cash reserve to be used only for exploration work, for purchase and development of new acreage and extension of gathering lines.

"The prevention of waste of oil has aided materially in conservation of gas. On December 5, last, William Armstrong, chief conservation officer of the Oklahoma Corporation Commission, called representatives of all Oklahoma gas companies, producers and buyers to his office. In substance, Mr. Armstrong said:

"'Gas is still being wasted. We have made progress, but we haven't gone far enough. Waste must be stopped. There is bound to be a way. I think we can do the job, and, in starting our discussions, let me suggest that we all sit on the same side of the table, so you gentlemen can continue to run your own business. The state will sit in as a sort of unofficial umpire to see that none of you fellows try to out-smart the others.'

"Preliminary rules were drawn. At that first meeting everyone was in agreement. A second meeting was held. Additional rules and regulations were adopted; and then a committee of five was appointed to whip the plan, the new ideas, the new thoughts into shape.

"This committee enters upon its work cognizant of the fact that oil and gas cannot be divorced. They know that the oil producer is leading the conservation battles in the Texas Panhandle and elsewhere. They know, and I agree with them, that the establishment of a proper gas-oil ratio is necessary in order to recover more crude petroleum per acre than was possible under methods now obsolete. The oil man is a gas man. Since the Burbank pool development, he has been a thorough convert to maintenance of proper bottom-hole pressures. And, in perfecting advanced methods in oil production, he will save gas so as to maintain reservoir energy to the highest possible point.

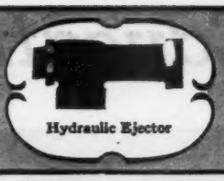
"This Armstrong committee will have the united support of the Interstate Compact Commission. The oil and gas producers, those who drill and operate wells, have outlined a practical program, which is bound to succeed. They are building a substantial foundation for the natural gas man. The gas business must complete the job, and, in carrying on, it dare not overlook the fact that there are three distinct phases to the business—production, transmission, distribution—and they must be harmonized. The producer without a market must not be permitted to become the 'forgotten man'; for if he is, someone else may find him. Closer cooperation must be established with manufacturers of gas appliances. The pipe line must not be empty at either end. Gas must either remain in the ground or be available to a pipe line; and runs through that line must be on a ratable basis.

"Failure of any one of these various campaigns will turn the gas industry's path in the direction of Washington and then, indeed, the trend will be toward federalization. With that thought in mind, I say to the natural gas industry that unless it plugs the leaks in its control heads, and that quickly, a power greater than the board of directors of any existing gas company, is very apt to build a vast new Christmas tree of its own, and there won't be any Santa Claus."

"Whither Are We Going" was the subject of a paper by J. F. Owens, president, Oklahoma Gas & Electric Co., Oklahoma City.

OFFICERS OF ECONOMIC PALEONTOLOGISTS AND MINERALOGISTS

Gayle Scott, secretary-treasurer; Raymond C. Moore, editor; Reginald Harris, vice president and Merle C. Isrealsky, president, elected at the Tulsa meeting last week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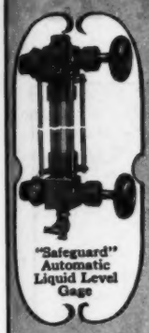
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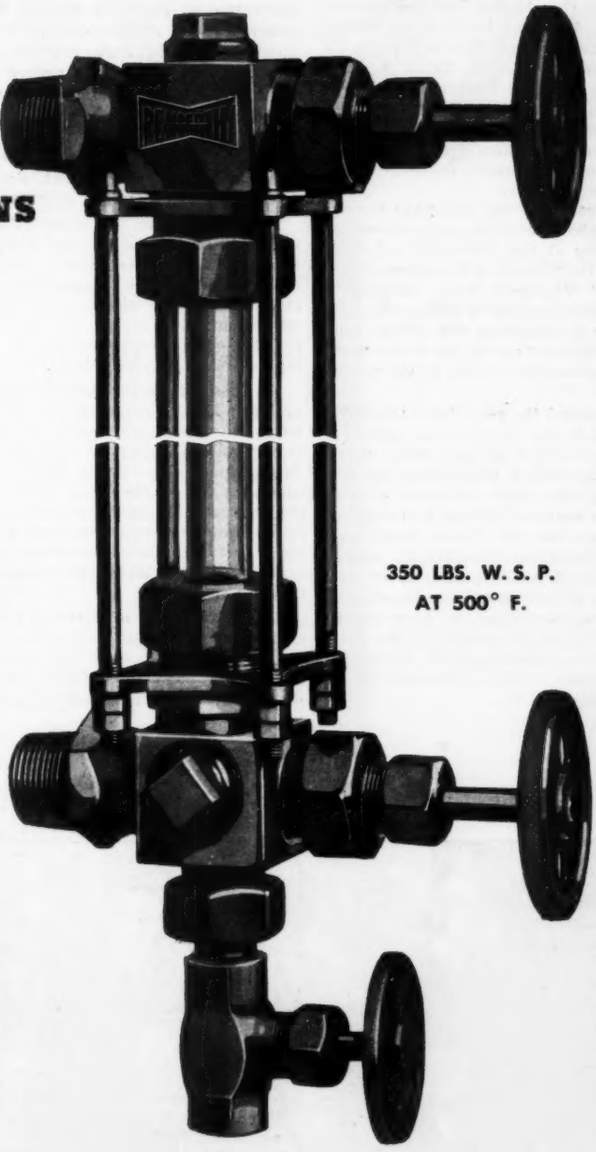

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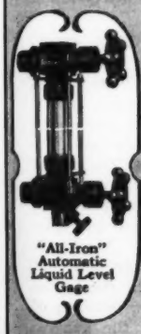
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Ball type safety valves are located in each gage arm to automatically and positively close when the glass is broken. Ball in lower valve must be lifted to seat and cannot close unless glass breaks; this absolutely prevents a false water level from being shown. The shut-off valves are arranged for easy regrinding. Packing glands prevent any torsional stress on glass when packing nuts are drawn down.

The gage arms are self-cleaning. The glass is offset from stems for cleaning from either end without loosening glass packing or valves. A separate drain valve, union nut and tail are furnished; valve can be connected directly to gage or placed wherever most convenient.

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Petroleum Engineering Education Is Topic of Texas A.I.M.E.

By GEORGE WEBER

AUSTIN, Tex., Mar. 23.—Speakers from widely separated points of the United States addressed the joint spring meeting of the Texas Chapters, Petroleum Division, American Institute of Mining and Metallurgical Engineers in Austin, March 17. Members of the Houston Chapter, Texas A. & M. College Chapter and the local University of Texas Chapter were in attendance in addition to many Texas engineers and oil men. The meeting consisted of an afternoon colloquium dealing with the training of petroleum engineers, followed by a banquet with further papers.

The principal speaker of the afternoon session was L. C. Uren, who heads the department of petroleum engineering at the University of California. Speaking on the "Trend of Petroleum Engineering Education," Professor Uren outlined a brief history of the development of petroleum engineering departments in American universities and cited the present trends and needs. His views were endorsed by other authorities present in the forum which followed.

Professor Uren stressed the need for a thorough training of students in the fundamental sciences, stating at least three years of this study were necessary for a well-grounded preparation for petroleum engineering. One year of study of the applied sciences was scarcely enough to complete a well-rounded education, but three additional years were not justified from the student's standpoint. Five years was therefore judged to be the optimum period for a petroleum engineering education. In this five-year curriculum he drew attention to the possibility of incorporating the full period in undergraduate training, or of offering a four-year undergraduate course, followed by a year of graduate study.

In regard to research, Professor Uren pointed to the benefits and drawbacks of undergraduate participation. Research on that basis was recommended as an introduction to the field, but limited supervision, high expense and conflict of regular curricular study prevent its accomplishing much beyond teaching the manner of approach and developing a liking for research. Graduate research in American universities was held to be very valuable, and a necessary part of every petroleum engineering department, since the university is the origin of research activity.

The importance of summer field courses for undergraduates was stressed. This phase of education pioneered at Oklahoma University gave the uninitiated student a broader field training through observation of development and production methods in actual practice. The recommended period for this course comes during the summer preceding the final year of college.

Professor Uren recommended the plan proposed by Prof. H. C. George of the University of Pittsburgh, that some university in each of the three major oil-producing areas, the Mid-Continent, Appalachian and Pacific Coast regions, offer a summer field course where petroleum engineering students might observe methods practiced in areas other than those in which their respective universities are located. Cooperation among the universities in this and other phases was declared invaluable.

The difficulties of offering extension instruction in petroleum engineering was discussed. Class instruction in the large oil cities for men with preliminary technical training was suggested as a successful manner in which to carry out extension work, the nature of the courses precluding the practice of correspondence study.

Finally, Professor Uren stated the wish of educators to bring about a balanced curriculum of study so designed to best prepare the petroleum engineering graduate for the wide variation of specialized fields into which the oil industry might place him.

Supplementing this discussion, Dr. E. A. Stephenson, head of petroleum engineering department, Missouri School of Mines, talked on "Prespecialization Training for Petroleum Engineers." Doctor Stephenson dealt with the problems of sectionization of freshmen engineering students and the elimination of those not suited to that particular profession. He described the system of placement examinations, aptitude and training tests and other means of determining whether a student is studying in the right field.

The forum following these papers brought out views of several educators and men in the industry. In discussing the relation between schools of production and refinery engineering, the general opinion was expressed that the two schools, while associated fundamentally, are clearly different and distinct in the more advanced stages. A superficial knowledge of the other phase of the industry should be given students in each branch, but this should be submerged to the specialization required in the respective subjects. The realm of geophysics and its relation to petroleum engineering was also considered, but consensus of opinion placed it definitely outside the scope of petroleum engineering, and in a category for graduate study to be superimposed on a fundamental knowledge of geology.

A knowledge of English and economics was conceded to be an important part of the petroleum engineer's training, to prepare him for executive positions to which he may succeed.

Following the banquet, two short papers were presented. H. H. Power, Tulsa, chief petroleum engineer of the Gypsy division, Gulf Oil Corp., enumerated the "Duties and Purposes of the District Engineer." E. DeGolyer, of Dallas, briefed the development of oil finding methods in his paper on "Historical Consideration of the Problem of Prospecting for Petroleum."

This joint meeting of the Texas chapters was the first of its kind to be held. It is proposed to continue it annually, alternating the place between College Station and Austin. F. B. Plummer, head of the petroleum engineering department at the University of Texas, was in charge of arrangements for the first joint meeting.

Dr. F. B. Plummer and Dr. Lester C. Uren, heads of the Petroleum Engineering Departments, respectively, at the University of Texas and the University of California

TEXAS CHAMBER OF COMMERCE HONORS OIL MEN

A group of Houston, Tex., oil men taken at a banquet given them by the Bay City Chamber of Commerce for their efforts in bringing development to that city due to recent discoveries in Matagorda County.

Top row (left to right): C. G. Hamill, Hamill Drilling Co.; George Hamman, Hamman Exploration Co.; former Gov. R. S. Sterling, Sterling Oil & Refining Co.; H. C. Cockburn, Cockburn Oil Corp.; H. M. Stalcup, Skelly Oil Co., Tulsa; George R. Burke, W. F. Tetts. Bottom row: Carl Benz, Strake Oil Corp.; George W. Strake, John Deering, Pat R. Rutherford, Rutherford Drilling Co., and John Hamman, Jr., Hamman Exploration Co.

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Increase in Crude Oil Forecast and April Gasoline Output

The daily average production of crude oil for April, 1936, forecast by the Bureau of Mines to meet contemplated demand, is 2,797,300 bbls., an increase of 58,400 bbls. above the level recommended for March, and 270,000 bbls., or 11 per cent, above the allowable for April, 1935. As was the case in February and March, the increase in the recommendation for April reflects the seasonal gain in a gasoline demand which continues to establish new records.

Motor Fuel

The domestic motor demand for April has been estimated to be 38,680,000 bbls., a daily average of 1,289,300 bbls., 6 per cent higher than the comparable figure of a year ago; but, as the demand for last April was unusually high, the forecast for April, 1936, is about 9 per cent above the "normal" demand of a year ago.

Exports. Confidential reports from exporters of gasoline indicate that shipments to foreign countries in April, 1936, will be about 2,800,000 bbls., the same as forecast for March.

Stocks. The unfavorable weather of recent weeks and the tendency of refiners to increase crude runs to meet a heavy demand for heating oils have caused a rapid increase in gasoline inventories. Such inventories of finished and unfinished gasoline on January 31 were 62,613,000 bbls. According to the American Petroleum Institute, such stocks increased about 7,700,000 bbls. in February. An additional 3,000,000 bbls. will probably be added in March, hence stocks as of March 31 may amount to 74,000,000 bbls. This total is from 5,000,000 to 10,000,000 bbls. above the various estimates of requirements; hence, to meet the minimum requirements as of October 31, the contemplated withdrawal for April, the first month in which stocks are normally drawn on, is greater than usually recommended. This withdrawal has been set at 1,780,000 bbls., which compares with a recommended increase of the same amount for March.

Gasoline production. The estimate of "direct" sales of natural gasoline and benzol has been reduced from 900,000 bbls. in March to 840,000 bbls. in April, a reflection of the seasonal decline in sales of stabilized natural as motor fuel. The addition of exports, and the deduction of stock decreases and "direct" sales, gives 38,860,000 bbls. as the required production of finished and unfinished gasoline in April, 1936. This is distributed among the districts as follows (thousands of barrels): East Coast, 6,410; Appalachian, 1,500; Indiana-Illinois, 6,220; Oklahoma, 2,580; Kansas-Missouri, 2,400; Texas Inland, 2,930; Texas Gulf, 8,180; Louisiana Gulf, 1,320; Arkansas-Louisiana Inland, 790; Rocky Mountain, 880; California, 5,050.

Crude Petroleum

Runs to stills. The estimate of the percentage of natural gasoline to be used in the production of gasoline has been reduced in accordance with the usual seasonal decline from 6.3 per cent in March to 6 per cent in April. The percentage for April, applied to the contemplated output, is equivalent to 2,330,000 bbls., leaving 36,530,000 bbls. of straightrun and cracked gasoline to be made from crude.

The percentage yield of gasoline is 44.40 per cent, an increase of .41 per cent over the average of March. The application of this factor to the gasoline required gives 82,270,000 bbls. of crude to be run to stills.

Imports. Runs to stills of foreign crude for April are estimated at 2,800,000 bbls., compared with 2,900,000 bbls. in March.

Exports, fuel and losses. Crude-oil exports are estimated as 3,900,000 bbls., the same as in March. Losses and the consumption of crude oil as fuel are forecast as 2,200,000 bbls., slightly under the estimate for March.

Stocks. Provision has been made for the withdrawal of 55,000 bbls. daily from crude-oil stocks, an increase of 30,000 bbls. over the recommended reduction in March. This increase is based on the generally accepted assumption that withdrawals from stocks should increase concurrent with consumption.

Required production. The proper additions and subtractions give 2,797,300 bbls. as the daily average required production in April, 1936. The breakdown of this figure by states is shown in Table 1 (please refer to footnote 1).

TABLE 1—RECOMMENDATORY LEVELS OF REQUIRED CRUDE OIL PRODUCTION BY STATES

(Daily averages in barrels)

State—	1936 March	1936 April
Texas	1,104,000	1,122,800
California	[1]538,000	[1]552,600
Oklahoma	506,300	525,000
Louisiana	151,400	160,900
Kansas	142,000	146,000
New Mexico	64,200	63,200
Pennsylvania	44,800	44,800
Michigan	44,300	41,000
Wyoming	34,800	34,800
Arkansas	31,900	30,500
Kentucky	14,500	14,400
Montana	12,400	12,300
New York	10,800	11,100
Illinois	11,600	11,000
Ohio	10,300	10,800
West Virginia	10,400	10,000
Colorado	3,700	4,100
Indiana	2,200	2,000
Total	2,738,900	2,797,300

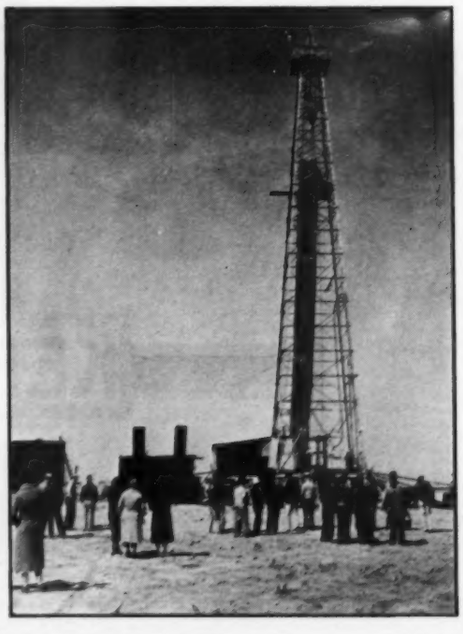
[1]The recommendations indicated for California for March and April have been calculated as the requirements for those months alone and are not intended to be calculations of daily average demand for the current year

TABLE 2—SUMMARY OF FORECASTS FOR APRIL, 1936

(Barrels)

	March, 1936	April, 1936
Demand for motor fuel:		
Domestic demand	35,000,000	38,680,000
Exports	2,800,000	2,800,000
Total demand	37,800,000	41,480,000
Supply of motor fuel:		
Straightrun and cracked gasoline	36,240,000	36,530,000
Natural gasoline used at refineries	2,440,000	2,330,000
Total refinery production	38,680,000	38,860,000
Benzol and stabilized natural	900,000	840,000
Recommended increase (*) or decrease (†) in stocks	*1,780,000	†1,780,000
Available supply	37,800,000	41,480,000
Crude oil requirements:		
Per cent yield of gasoline from crude	43.99	44.40
Refinery crude required	82,380,000	82,270,000
Imports	2,900,000	2,800,000
Exports	3,900,000	3,900,000
Fuel and losses	2,300,000	2,200,000
Total demand for domestic crude	85,680,000	85,570,000
From stocks	776,000	1,650,000
Required production	84,905,000	83,920,000
Daily average	2,738,900	2,797,300

TALCO TEST PROVES PRODUCER



Peveto and others No. 1 Carr, near Talco, Titus County, Northwest Texas, long awaited test showed for commercial producer

OBITUARY

J. J. PHILLIPS, SR., former Wichita Falls, Tex., oil man, died at Bartlesville, Okla., recently. He was connected with the Osage Oil Co. in the Burkburnett area before leaving Bartlesville about 12 years ago. He resided in Wichita Falls about 15 years.

THOMAS F. CONNELLY, JR., of Genesee, Pa., son of the late T. F. Connelly, of Bradford, Pa., and a prominent chemical manufacturer, died in Bradford on March 14. He was a brother of Donald Connelly of the Indian Territory Illuminating Oil Co., Bartlesville, Okla., and Ernest L. Connelly of the Larkin Torpedo Co., Tulsa.

Industries Open Battle on the Stream Pollution Bill

WASHINGTON, D. C., Mar. 23.—All industry has opened battle on the enactment of stream pollution control legislation before the special subcommittee of the Senate Commerce Committee with the resumption of hearings on the Lonergan bills. Representatives of all industries, including the oil industry, which would be affected by the enactment of such legislation are on hand to testify in opposition to the enactment of such a law, and judging from the temper of the committee today there is a good chance the law may be defeated at the present session.

The general tenor of all statements so far made is that the United States Public Health Service has, at the present time, sufficient authority to control and regulate all the practices sought to be remedied in the proposed law, the only thing which is holding them back being lack of appropriations from congress for the work. The health service, it is stated, has ample authority to decide when stream pollution through either industrial or municipal waste, is being carried on to such an extent as to endanger the health of the affected communities, while at the same time having ample power to stop such practices when it is so found. Up to the present this work has been neglected due to lack of federal appropriations.

Crude Oil Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ending March 14 totaled 310,120,000 bbls., according to the Bureau of Mines, an increase of 15,000 bbls., comprising an increase of 55,000 bbls. in stocks of domestic but a decrease of 40,000 bbls. in stocks of foreign crude. Receipts of foreign crude increased slightly, the daily average being 95,000 bbls. compared with 91,000 bbls. for the previous week.

Grade of crude oil—	March 7	March 14
Pennsylvania Grade	4,049,000	4,119,000
Other Appalachian	900,000	887,000
Lima-N. E. Indiana-Michigan	1,112,000	1,170,000
Illinois-S. W. Indiana	10,571,000	10,497,000
N. Louisiana and Arkansas	9,401,000	9,608,000
West Texas and S. E. New Mexico	28,611,000	28,694,000
East Texas	20,331,000	20,430,000
Other Mid-Continent	127,203,000	127,209,000
Gulf Coast	25,829,000	25,783,000
Rocky Mountain	26,570,000	26,575,000
California	35,854,000	35,514,000
Foreign	3,174,000	3,134,000
Total reported weekly	293,655,000	293,620,000
Estimate of unreported stocks	16,450,000	16,500,000
Total stocks	310,105,000	310,120,000

Self-taxation

As long as a refiner goes without a Dubbscracking unit, just so long he is taxing his company

The amount of the tax is the difference between what the company is earning now and what it could earn by Dubbscracking

That's a heavy tax

Don't tax yourself

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

Oil News from Foreign Lands

German Refining Plants Are Showing Expansion

German refinery operations have been expanded to the point where the several operating plants are now handling approximately 20,000 bbls. of crude oil daily. In addition, considerable gas-oil is brought into the country for cracking operations and some of the other imported oils undergo further refining in the manufacture of finished products.

GERMANY

The enlarged crude supply comes from the increased domestic production and also larger imports. The present crude oil production of fields in Germany is approximately 8,500 bbls. daily, all of which is refined at plants in that country. During the past year imports of crude oil have practically doubled and now amount to more than 10,000 bbls. daily. It is expected that domestic crude oil production this year will pass the 10,000-bbl. daily mark. Five new pools were discovered during 1935. The government is encouraging additional exploratory drilling and geological surveys are being made in several sections of the country.

Despite the increase in refinery crude runs Germany continues to expand her imports of finished refinery products. This is due to an increasing domestic consumption of petroleum products, its gain in 1935 exceeding that of other European countries. The following table gives the imports of refinery products in 1935 based on government reports (data in metric tons):

	1935	1934
Gasoline	1,224,344	1,158,285
Gas oil	582,993	639,916
Lubricating oil	437,421	322,033
Fuel oil	326,316	316,180
Other residual oils	305,206	282,689
Asphalt	59,369	60,429
Kerosene	75,287	98,261

In addition to the above, substantial quantities of motor fuel and other petroleum substitutes are obtained through hydrogenation of coal.

Lubricating Oil Consumption in Jugoslavia Grows

The yearly consumption of lubricating oils in Jugoslavia amounts approximately to 100,000 bbls. In 1935, about 84,000 bbls. were sold by the cartel of the three big oil companies representing American, English and Rumanian interests. The remainder was shared by some small outsiders of local importance. As Jugoslavia does not yet possess any considerable oil production of its own most of the lubricating oil must be imported. Imports of naphtha, gasoline and lubricating oil into Jugoslavia for the past four years follows (barrels):

JUGOSLAVIA

	1932	1933	1934	1935
Naphtha	430,000	570,000	500,000	520,000
Gasoline	27,000	27,000	26,000	8,000
Lubricating oil	30,000	30,000	19,000	19,000

These figures show that only about 20 per cent of lubricating oils sold and consumed in that country during this period have been imported as finished products. The remaining 80 per cent had to be manufactured by the two existing refineries in Caprag (Shell) and in Brod (Socony-Vacuum) from Rumanian crude oil, that is not suitable as a base for the manufacture of high quality oils. Lubricating oils from such a crude are considered in Jugoslavia as low grade oils, and are sold on the market as floor oils and ordinary machine and cylinder oils. The imported lubricating oils as shown are mostly oils of higher quality. Of the imported oils a very large percentage belong to oil of American origin as shown by the following figures (barrels):

Imports of lubricating oils—	1932	1933	1934	1935
Total	30,000	20,000	19,000	19,000
Oils from U.S.A.	21,800	15,000	14,900	14,000
Per cent of total	73	75	78	73

The table indicates also that the imports of quality oils are slowly declining and that the country is consuming more and more home-made low grade oils.

Statistics for 1935 show an average cost price for the imported lubricating oils f.o.b. border at 2.75 dinars per kilo net weight to which amount are to be added 2.25 dinars for duty and expenses thus making up a total average price of 5 dinars per kilo. Quality oils are sold at an average price of 12-15 dinars, auto oils at 18-20 dinars and special cylinder oils even at higher prices per kilo. And these are not prices quoted to the customer but dealer prices.

The quality of American lubricating oils is very well known.

Deep Test in India Flows; Ship Bahrein Crude to Europe

It is reported from London that a deep test being drilled by the Attock Oil Co., Ltd., in the Dhulia district of British India, started flowing at the rate of 20 bbls. hourly at a depth of 7,850 feet. Burmah Oil Co., Ltd., is understood to have an interest in the test.

INDIA

BAHREIN

Shipments of Bahrein Island crude oil to European refineries of the Standard Oil Co. of New Jersey are reported to have been arranged, effective about March 10. It is not known whether they will be consigned to British or French plants, or to both. The Bahrein Island field is controlled and has been developed by the Standard Oil Co. of California.

Standard Oil Co. of California Enters Sumatra Field

Standard Oil Co. of California and Royal Dutch-Shell have been granted oil concessions on the island of Sumatra, Netherlands East Indies, according to advices from Amsterdam. This would mark the entrance of Standard of California into the Netherlands East Indies. The concession granted the California company aggregates approximately 1,500,000 acres and is in the central portion of the island. It will be controlled by Pacific Petroleum Co., a subsidiary. Drilling is expected to start in the near future.

SUMATRA

Mexican Production Taxes in Month of February

The following report gives the values and production taxes for February in Mexico (calculated in silver at exchange of 3.60). The production tax on fuel oil will vary approximately .00925 per barrel for each degree of specific gravity above (deduct) or below (add) 0.95 specific gravity. The production tax on light crude will vary approximately .00996 per barrel for each degree of specific gravity above (deduct) or below (add) 0.93 specific gravity.

MEXICO

VALUES

Fuel oil—24.55 silver pesos per cu. meter=$1.08 per bbl.
Gasoline—79.60 silver pesos per cu. meter=$.0837 per gal.
Kerosene—50.31 silver pesos per cu. met.=$.0529 per gal.

PRODUCTION TAXES

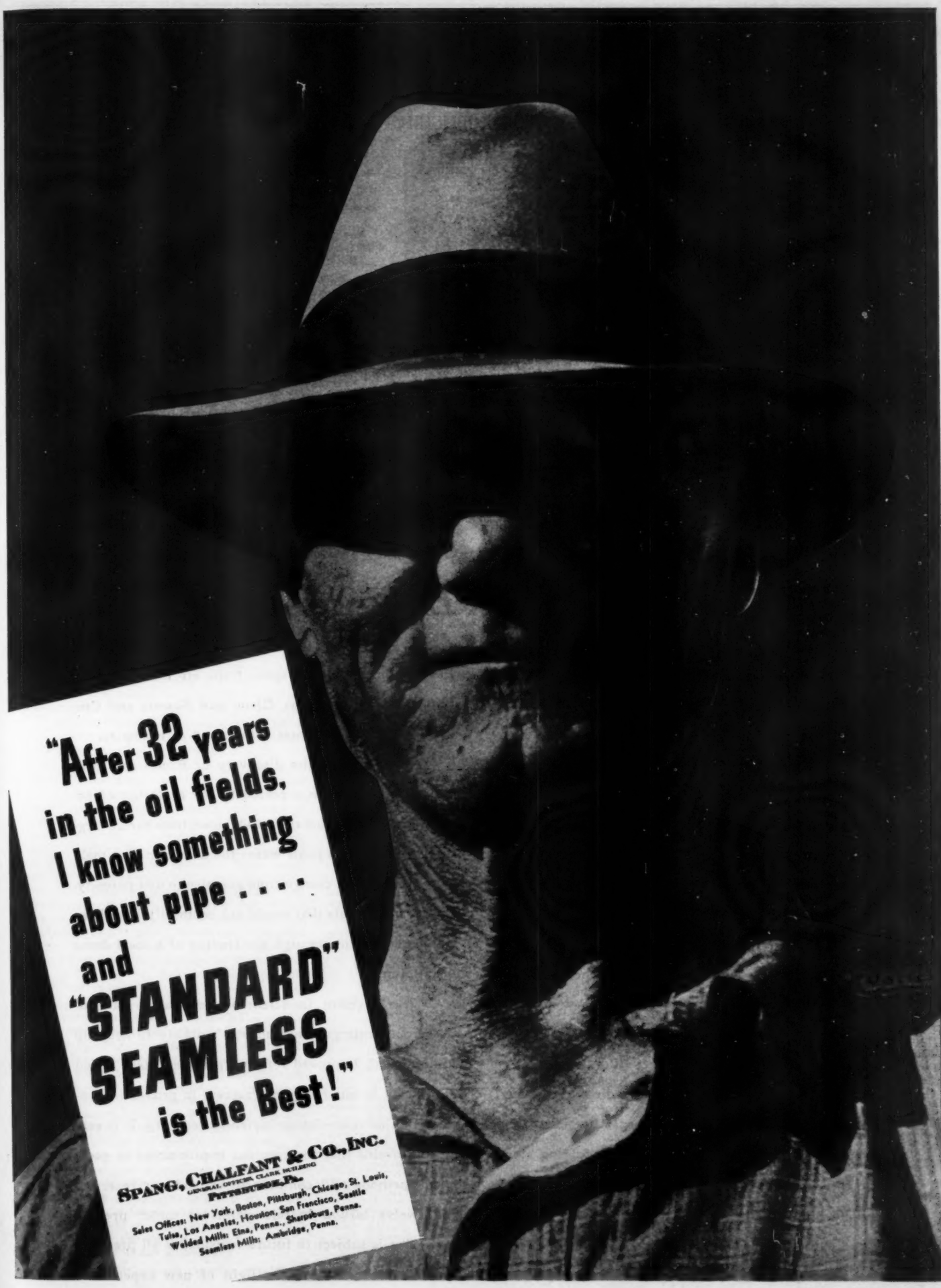
	Tax per cubic meter (pesos)	Tax in U.S. currency per bbl.
Crude:		
(Sp. gr. 0.96=Be. 20.38)	2.751	$0.12149
(Sp. gr. 0.96=Be. 15.68) or heavier	1.659	.07326
Fuel oil (sp. gr. 0.95=Be. 17.21)	2.553	.11274
		Per gal.
Gasoline (crude)	3.184	.00335
Gasoline (refined)	1.592	.00167
Kerosene (crude)	3.019	.00217
Kerosene (refined)	1.509	.00159

EXPORT TAXES

NOTE: As export taxes are payable in silver at par, to make calculations in U. S. currency, take figures given below, multiply them by 2 and divide by rate of exchange at time of payment.

	U. S. currency ($1 for 2 pesos)
	(Per bbl.)
Crude:	
(sp. gr. 0.93=Be. 20.38)	$0.07949
(sp. gr. 0.96=Be. 15.68) or heavier	.04928
Fuel oil (sp. gr. 0.95=Be. 17.21)	.05962
	(Per gal.)
Gasoline (crude)	.00472
Gasoline (refined)	.00189
Kerosene (crude)	.00151
Kerosene (refined)	.00057

Pozo del Sur, Barco concession, Colombia, estimated at 16 to 25 barrels a day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the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by THE PETROLEUM PUBLISHING COMPANY at Tulsa, Oklahoma

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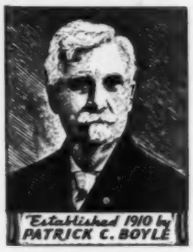
C. O. WILLSON, Editor
W. T. ANDERSON, Managing Editor



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Exceeding Estimates

It is notoriously true that every estimate of our petroleum reserves yet made has been disproved by actual developments. Those estimates were made on the best available knowledge at the time they were made but as the frontier of our knowledge was extended by the petroleum geologist and the petroleum engineer larger reserves were found and earlier calculations had to be revised upward.

The presidential address of Mr. Levorsen before the annual meeting of the American Association of Petroleum Geologists in Tulsa last week illustrated this point very clearly and was the general topic of conversation during the three days convention.

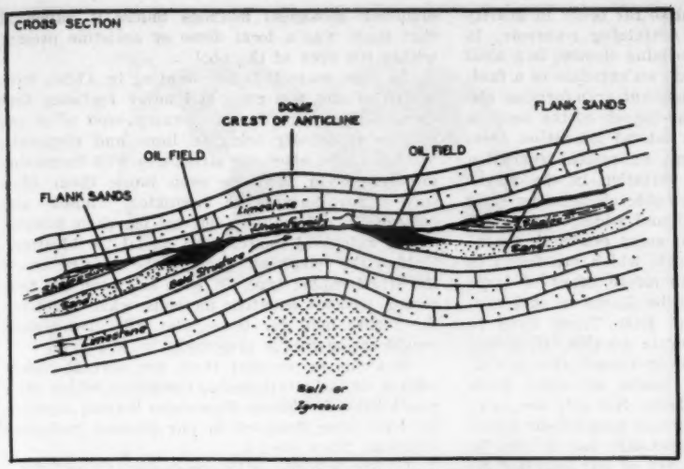
Realizing the pressing responsibility upon the geologists to find a billion barrels of oil reserves each year to offset the annual consumption the profession has been impelled to seek new tools and new methods, thus far so successfully that the current demand has always been supplied.

Each dome, fault or anticline discovered, however, has left one less to be found or, as President Levorsen put it, "if we are to depend upon folding alone our future discoveries are indeed limited for we are undoubtedly running low on the supply of untested domes and anticlines."

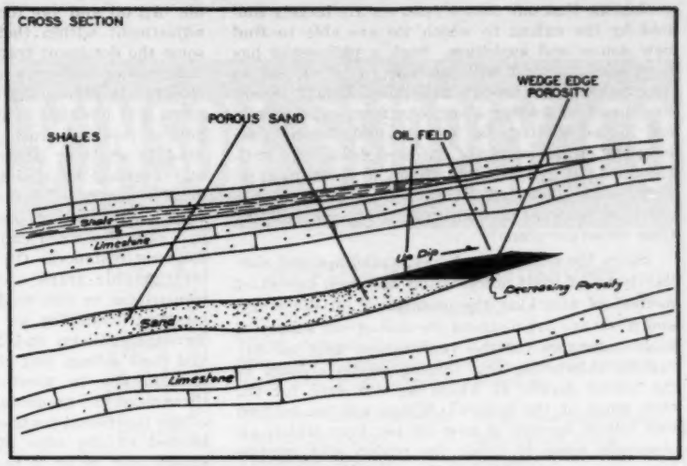
It is possible, as President Levorsen says, that the approach to the problem of oil discovery has been too closely confined to a mere search for local deformation, increasingly limited by testing. The suggestion is made that while interest has been centered on the oil in structural traps the possibilities of oil in stratigraphic traps has been neglected. Pools found in stratigraphic traps are often of large proportions, East Texas, Glenn and Nowata and Coalinga and Midway-Sunset being cited as examples.

A decline in the discovery of domes and anticlines would not put a period to the evolution of petroleum geology. Half the oil obtained from the 22 largest pools was from pools where the dominant trap making element was a change from porosity to non-porosity, stratigraphic pools that would not ordinarily have been discovered except through the finding of a local dome or anticline.

Advancement in scientific knowledge has immeasurably enlarged the industry's ability to keep up with demand. Improved refining processes have added 40 per cent to our reserves. Progress in production engineering has marvelously increased recovery. It is easily conceivable that the constant improvement in geological methods will continue to expand our reserves. The twelve billion barrels estimated under present knowledge is subject to future revision, as all previous estimates have been, in the light of new experience, newer information, and scientific advancement.



Oil accumulation on flanks of "bald headed" structure



Stratigraphic trap type of oil pool

Stratigraphic Versus Structural Accumulation

THE A. A. P. G. PRESIDENTIAL ADDRESS

By A. I. LEVORSEN

Twenty years ago last October a group of 27 geologists living in Oklahoma met in Tulsa at the call of J. Elmer Thomas and it was decided that an association of geologists should be organized as had previously been proposed by E. L. DeGolyer and Charles H. Taylor. Out of this beginning grew the American Association of Petroleum geologists, the membership of which now exceeds 2,150. This growth in membership has been in proportion to the growth of the oil industry and is direct evidence of the positive value which the oil industry gives the application of the science of geology to its peculiar problems.

With this growth in membership has come an increased responsibility. As never before, the oil industry, and back of it the nation, have come more and more to depend upon the application of geology for guidance in the maintenance of our petroleum reserves. We have become the great, scientific thinking group particularly concerned with the discovery of oil and gas. While many discoveries have been made in the past by so-called nonscientific methods and undoubtedly will continue as long as there is a "wildcatter" left, yet the future reserves of the nation most certainly cannot be depended upon to come through such haphazard methods. A billion barrels of new oil a year is a large order and the responsibility of finding it is coming to rest squarely upon our shoulders, individually and collectively.

Since we have made great gains physically, both in our numbers and in our influence, we might ask ourselves what progress have we made in the quality of our thinking? For there lies the only true measure of our growth. Are our theories, methods and ideas adequate to guide the oil industry into those paths where it will continue to maintain a discovery rate equal to its needs over a long period of time? Concern is expressed in many quarters that we are facing a declining discovery rate during the next decade and that there is nothing we can do about it. If that is even a possibility, it might be appropriate to examine briefly some of our ideas and theories, particularly those far out on the frontiers of our knowledge, to see if they might not be extended or improved. It might be worth while also to see if we are making the fullest application of our science and so warrant the continuing respect of the oil industry.

We have arrived at our present position of trust almost entirely through our application of the anticlinal theory to the problem of oil discovery and we have attacked the business of locating anticlines, folds and local deformation most energetically. Up to 1925, almost all of our work was surface mapping and there is probably no single county in the United States, underlain by sedimentary rocks, the surface of which has not been scrutinized by the field geologist. In fact, many counties have been examined by the field geologist. The core drill was then used to assist in locating folds in those areas which could not be mapped by surface observation, and, particularly in many parts of the Mid-Continent, core drilling flourished and was successfully applied for several years. The search was always for closed structure. With the increase in the number of oil wells, subsurface structure mapping became an important part of our work and now occupies the time of a large percentage of our members. For several years contours were made in great abundance and at relatively low cost by magnetic methods—until it was finally learned that these did not necessarily reflect the structure of the sedimentary rocks which contained the oil and gas. Aerial photography was used in the search for anticlines with success in many localities and has been and continues to be of particular assistance in the areas characterized by strong folding and inaccessibility. Gravity anomalies determined by the torsion balance are often interpreted into structure and particularly in the Gulf Coast region have been found to assist materially in the search for buried domes and salt plugs. The remarkable progress which has been made in seismic methods during the past years has resulted in the mapping of structure at great depths with almost uncanny accuracy. The presence of 180 geophysical parties at work in the United States alone is sufficient proof of the position which geophysics has reached in the eyes of the practical operator searching for oil.

However, by whatever method used, the search has been always for local deformation such as anticlines, domes, faults and similar features. We began looking for such structure at the surface by surface methods and we have progressively deepened the plane of our search until we are now actively searching for domes which occur at depths of 5,000 to 10,000 feet and in some areas even deeper. The present wave of seismic exploration at these depths might be said to be the last stand of local structure to escape detection and these geophysical methods are rapidly finding all of the folds and local deformation which were missed by previous methods. As each method of structure hunting was developed, it provided a sufficient number of new folds for exploitation so that the current petroleum needs were met. We have all, therefore, drifted along from one structure finding method to another until now we are apparently approaching the real danger of an oversupply of methods and an undersupply of anticlines.

One major criticism which I think can be made of our approach to the problem of oil discovery is that we have been too closely confined in our efforts to a mere search for local deformation. We have led the oil operators, executives and managers of our oil companies to believe in the magic of the closed structure contour until it is quite generally believed, by both geologists and non-

RECORD OF LEADING PRODUCING FIELDS IN THE UNITED STATES

(From The Oil and Gas Journal, Oct. 31, 1935, p. 12)

Year opened		Total prod. up to Dec. 31, 1934 (bbls.)
*1901	Midway-Sunset, California	766,916,874
*1930	East Texas, Texas	611,071,184
1926	Seminole field, Oklahoma	554,004,822
1921	Long Beach, California	525,245,127
1920	Santa Fe Springs, California	385,662,713
*1922	Smackover, Arkansas	344,623,786
*1896	Coalinga, California	333,802,296
*1875	Bradford, Pennsylvania	331,086,818
1912	Cushing, Oklahoma	319,800,831
*1900	Kern River, California	296,707,182
1916	Butler County, Kansas	264,166,477
1889	Salt Creek, Wyoming	257,868,337
1928	Oklahoma City, Oklahoma	249,461,391
1920	Huntington Beach, California	217,671,266
*1906	Glenn pool, Oklahoma	195,363,132
1926	Yates, Texas	195,383,327
*1920	Burbank, Oklahoma	185,617,566
1926	Hendricks, Texas	177,984,872
1913	Healdton, Oklahoma	177,295,695
1916	Ventura Avenue, California	151,244,008
1897	Fullerton, California	150,586,997
*1916	Bristow-Slick, Oklahoma	145,866,526

*Fields where the chief trap-making element is a stratigraphic variation in the reservoir rock.

geologists, that our future reserves are largely limited by the extent to which we are able to find new domes and anticlines. Such a philosophy has been adequate and will continue to be so just as long as there are enough anticlines. But, if we are to depend on folding alone, our future discoveries are indeed limited, for we are undoubtedly running low on the supply of untested domes and anticlines. Is it not possible that the dwindling reserve of the speculative thinking necessary to discover oil reserves dependent upon other conditions than structure alone?

Since the search for domes, anticlines and similar types of local deformation has been our chief method of attacking the problem of oil discovery, and if we are approaching the end of our supply of such structures for the very reason that we are rapidly exhausting our finding methods down to the lowest depths at which we can drill for oil, then what of the future? Where are we to find this billion barrels of new oil per year which all observers seem to think the nation will require for many years to come? The oil industry is not interested in our contours, in our gravity maxima and minima, in our rock velocities, our theories and such, but it is interested in us only in so far as we can tell where to drill to find barrels of oil. It is our job to find this oil, and if we fail, the industry will find someone else to do it.

May I suggest a practical, constructive geological approach to the problem in a method which has heretofore, with few exceptions, been almost untouched by scientifically trained workers but the casual application of which has accounted for at least a quarter and possibly a third of our total past production? It is the wider, much wider use of stratigraphic methods. As geologists we have been chiefly concerned in our past work with the oil which is found in structural traps and have sadly neglected the oil which occurs in stratigraphic traps.

A stratigraphic trap may be defined as one in which a variation in the stratigraphy is the chief confining element in the reservoir which traps the oil. All oil and gas found so far occur in gravity adjustment within their containing reservoir; in some the dominant trap-forming element is a local deformation such as a dome, an anticline or a fault closure; in others the dominant trap-forming element is a wedging or pinching-out of the sand or porous reservoir rock, a lateral gradation from sand to shale or limestone, an uplift, truncation and overlap, or similar variation in the stratigraphic sequence. Stratigraphic changes, by their very nature, are of broad and widespread extent and once discerned can in many places be traced for long distances. Oil pools which are found in stratigraphic traps are therefore often of large proportions as can readily be shown in such outstanding examples as the East Texas field in Texas, the Glenn and Nowata pool in Oklahoma, and the Coalinga and Midway-Sunset pools in California, not to mention scores of other pools throughout the producing belts. Not only are many of the individual pools of major proportions where located at the edge of porosity, but it can be shown that many if not most of our so-called oil provinces—i.e., regions which produce prolifically at a number of places for related reasons—contained a regional stratigraphic variation early in their history which has, in effect, been a strong controlling factor in the oil accumulation in the region ever since the reservoir rock was buried. Stratigraphic traps and stratigraphic methods are therefore of wide importance. These conditions of oil occurrence are not new to geologists, because oil in some of the oldest pools has long been known to have been trapped chiefly by stratigraphic variation in the reservoir rock, yet for some reason these conditions have been generally overlooked or neglected in our scramble for closed structure.

Of the 22 largest oil pools in the United States, according to The Oil and Gas Journal's list, over half of the oil production was obtained from pools in which the dominant trap-making element was a change from porosity to nonporosity.

Not a single one of these stratigraphic type pools would have been discovered by our present orthodox geological methods unless it happened that there was a local dome or anticline present within the area of the pool.

In some ways it is like hunting in Africa with air rifles and pop guns and never realizing that there is big game in the country even after the natives repeatedly bring in lions and elephants. We have gone after our structures with increasing minuteness—in fact, we even name them after such minor features as "wrinkles," "noses" and "pimples"—and we have left the big game hunting to the untrained hunter—the casual "wildcatter." Half of the "elephant" pools of the country are of the stratigraphic type. If such has been the past record, without scientific methods, what might not the future hold for those who will give serious consideration to the problem?

It seems to me that there are several closely related sets of stratigraphic conditions which offer possibilities for future discoveries beyond anything we have ever dreamed in our present geological thinking. They are:

1. Flank sands on known domes and anticlines.
2. New geologic conditions revealed below regional unconformities.
3. Up-dip, wedge-shaped porosity.

Flank Sands on Known Domes and Anticlines

How fortunate it was for those owning leases in the Oklahoma City field that the discovery well should have found oil on the top of the structure where the well-known producing Simpson formations were stripped off by pre-Pennsylvanian erosion. It would have taken a brave soul, indeed, to have recommended a second deep well down the west flank in the face of a dry hole on the top of the anticline. It took 17 years before geologists recommended drilling the west flank of the Billings dome in Noble County, Oklahoma, where the top of the fold was barren due to a similar erosion of the producing Simpson formations. This, as you know, is a recent discovery where large production has been found down the west flank in the "Wilcox" sand and gives promise of being a

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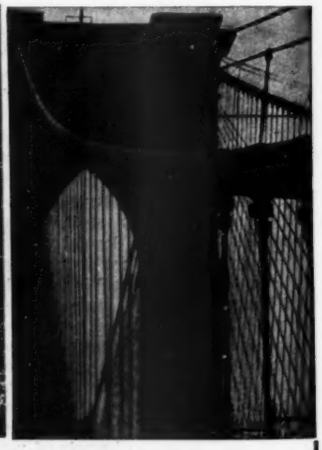

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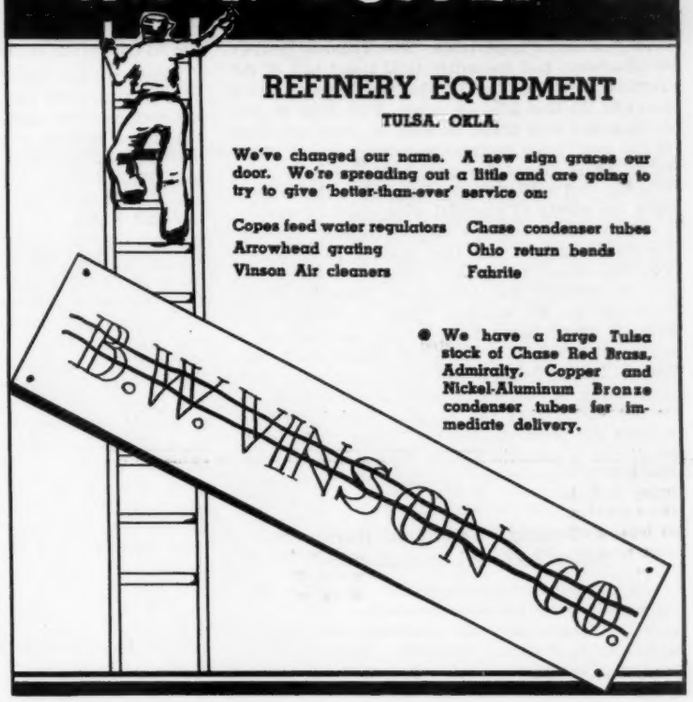

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pool of importance. I believe it was Ben Bolt who so aptly named these as "bald-headed" structures. The same principle accounts for the prolific flank production in the Spindletop, Sour Lake and Humble pools on the Gulf Coast. Many of our so-called dry structures may be dry because of their being "bald-headed."

Up to the present, outside of the Gulf Coast, little or no concerted scientific effort has been made to find oil occurring under these conditions. Beyond a doubt, it represents a field for oil discovery of major importance. The Ardmore district in Oklahoma and the entire Gulf Coast belt of the Tertiary are but two of the wonderful hunting grounds for this kind of game. This type of production has been found in each of these provinces in the past; each contains numerous eroded structures whose flanks are untested; and each province has had sufficient development so that a geologist has plenty of material with which to work.

Many other districts have structures containing flank sands of this type waiting to be tested. Two individual examples of those with which you are all familiar are the Jackson dome in Mississippi and the Ft. Stockton "high" in West Texas, both of which have eroded tops and are on a scale which warrants the belief that if flank production is ever found it will be on a big scale. And in thinking of this character of accumulation, let us not forget that the Nemaha buried ridge of Kansas and Nebraska has the largest "bald head" of all and a geologic history very similar to that of some of the smaller examples which are now flank producers.

New Geologic Conditions Revealed Below Regional Unconformities

All of us are prone to condemn too much. One reason why we condemn a prospect is because we so often forget there are unconformities in the stratigraphic section to be drilled. Yet our records are full of examples of major structure completely covered and obscured by later sediments. Who, for example, in advance of the drill, could have foreseen the Central Kansas uplift with its cover of uniformly west-dipping Permian and Cretaceous rocks? Or the hidden geologic conditions below the normal west-dipping Carboniferous rocks of Oklahoma? Or the Bend Arch of North Texas so completely obscured by the overlapping west-dipping Pennsylvanian strata? In each example a much different geology—both structural and stratigraphic—was uncovered below the regional unconformities than had been found above them. And, in each of these examples the geologic history of the concealed rocks was such as to have caused the accumulation of great oil and gas deposits.

Since we are rapidly exhausting the discovery of new structural and stratigraphic conditions at the surface of the ground, future oil discoveries of the nation must to a large extent be found under buried geological conditions of which we now have but faint, if any knowledge. Two such areas which are now taking form on the discovery frontier and which exemplify the possibilities of new geologic conditions concealed below unconformities are (1) the Comanche rocks of northern Louisiana, northeast Texas and south Arkansas, where 5,000 to 10,000 feet of hidden sediments are folded, tilted, deformed and completely overlapped unconformably by Upper Cretaceous rocks in a manner to warrant the expectancy of ultimately discovering oil and gas deposits of national importance and (2) the recent development in the pre-Carboniferous rocks in West Texas. These great thicknesses of oil-bearing Ordovician sediments, which have been folded, locally deformed and eroded, and show great lateral changes in porosity—all of which are the fundamental prerequisites for an oil province—are found to occur on a gigantic scale under a cover of rather low-dipping Carboniferous rocks. A geologic setting is being uncovered which leads one to expect that the future discoveries in the Ordovician rocks alone of West Texas might easily exceed anything which the oil industry has ever encountered in the past.

In addition to these two examples, there are less clear outlines of similar, buried regional conditions in many states and areas which are now not producing. Thus Nebraska, Colorado, and in fact most of the Rocky Mountain states, Florida, Georgia, Alabama and Mississippi are but a few such states where present indications are that future drilling will reveal buried geologic conditions which we cannot now map but which will be of a magnitude and of a character that if oil is present at all it promises to be in great quantities.

Up-Dip, Wedge-Edge Porosity

To this classification belong such pools as the Burbank, Glenn and Nowata pools in Oklahoma, the Cherokee sand pools of Kansas, the Coalinga pool in California, the Clinton gas pools in Ohio, and the East Texas and Government Wells pools in Texas, together with a host of lesser pools whose principal trap element is the lateral change from porosity to nonporosity. These are sometimes called "shore-line" pools, "sand lense" pools, or "shoestring" pools.

There are literally hundreds of sandstones in the United States, every one of which was laid down in the shape of a lense. The edges of some of these lenses have been eroded and are now gone; in other places the porosity edge faces or pinches out down the dip and consequently a trap is not formed; but in innumerable instances the porosity edge faces or pinches out up the dip, has remained in this attitude ever since it was formed, and is now untested. In addition, the stratigraphic history of almost every sedimentary region in the United States contains at least one, and in many places several, periods when regional uplift, truncation and overlap have occurred. The buried overlap of truncated sandstones and porous limestones constitutes one of the most favorable conditions by which such traps are formed and offers a vast and practically untouched field for exploration.

The East Texas pool is the most recent major discovery of this type of accumulation and because of its great size and economic importance should have focused the attention of everyone on the possibility of discovering other pools of this character. The expression is commonly heard that there are

(Continued on Page 48)

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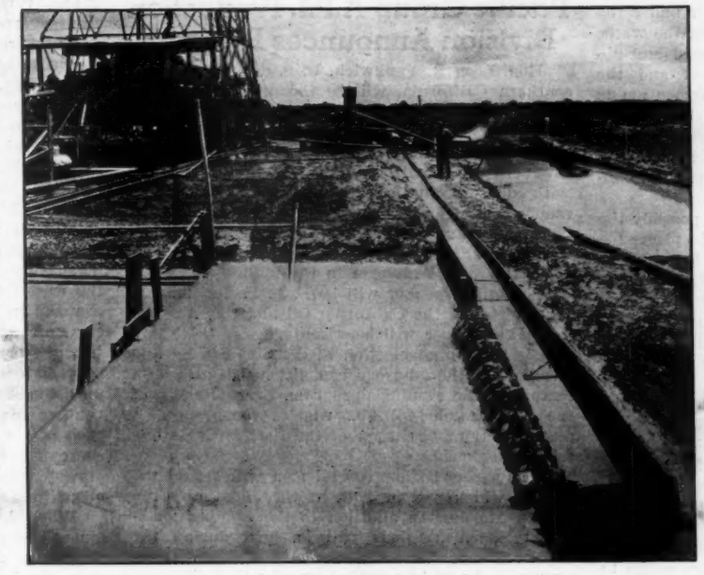
Rodessa Field Presents Some Unusual Deep Well Drilling Problems

By NEIL WILLIAMS

Like most all new fields, Rodessa, in northwestern Louisiana, has presented a number of unusual conditions and drilling problems. As the field has developed, operators have attempted to devise practices and means for handling the conditions and overcoming the problems. Although considerable progress already has been made in this, all the problems as yet have not been eliminated.

The first trouble experienced in drilling at Rodessa is in the Nacatoch formation, which usually is encountered between 2,100 and 2,400 feet. This formation is predominately sand, which has a tendency to cave and stick the drill pipe. By proper conditioning of drilling fluid, using a mud of high colloidal content to build up the walls, the Nacatoch may be negotiated successfully but it remains a hazard throughout the drilling of the lower formations until casing is run.



Mud ditch and slush pit for conditioning drilling mud

Down to the Nacatoch very favorable drilling conditions are experienced. Formations are easy to dig and as much as 100 feet or more per tour is made regularly. Also, these formations make an abundant supply of excellent natural drilling mud.

Below the Nacatoch, however, is a hard rock formation 20 to 30 feet in thickness, and on the whole the formations from there on down to the base of the massive anhydrite overlying the Oolitic lime (the producing horizon) are hard and comparatively slow digging. The massive anhydrite, which is topped around 5,000 feet, is some 600 to 700 feet thick.

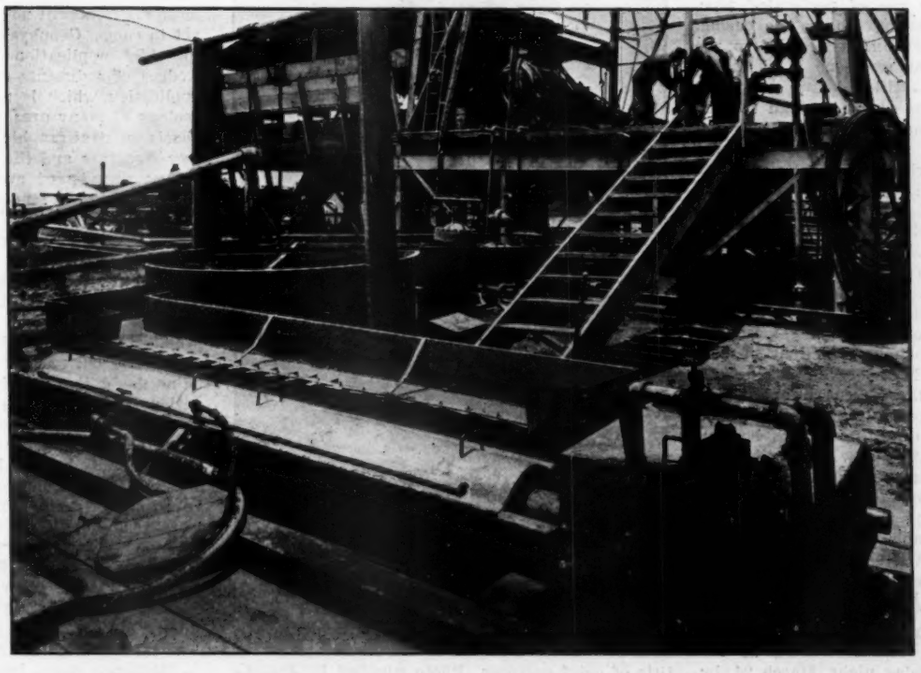
Throughout the drilling of these hard formations, particularly the anhydrite, it is difficult to make more than 20 feet without coming out of the hole to change bits. Rock bits are used exclusively but on these the cones are rapidly worn down. Seldom is more than 50 feet of hole made in a tour and in many instances not more than 50 feet a day is made.

Frequent twist-offs have been characteristic of drilling these hard formations, particularly the massive anhydrite. These have necessitated numerous fishing jobs, which slowed down drilling time and increased drilling costs. The problem has been one of especial concern and as such operators have been directing close attention to eliminating it.

Lately, several new drilling practices have been followed by several operators in drilling the anhydrite which so far have seemed to reduce the number of twist-offs. Previously, it had been the practice to carry a comparatively light weight on the pipe and turn the rotary at high speed, usually from 90 to 100 revolutions. Under the new practice, this speed is being slowed up to around 70 revolutions. At the same time, three-cone bits are being substituted for the two-cone bits which were used before. These operators have come to the conclusion that the two-cone bits tended to cut large pieces of anhydrite; these pieces in the bottom of the hole obstructed the movement of the bit; and the strain, or tension placed on the drill pipe, which was under high torque or tension as a result of the spinning action, caused the twist-offs.

The high rotary speeds originally were adopted as the drilling practice on the belief that such practice would facilitate making greater speed through the anhydrite. The desire for increased speed also was the reason for the use of two-cone bits. However, in view of the consequences, the added speed in actual drilling was offset by the loss of time due to twist-offs.

Although drilling these hard formations involves no walling problems, particular precautions must be taken by operators to protect the hole through the overlying Nacatoch sands, whose walls must be maintained to prevent the sands from caving in and sticking the pipe above. This has created a mud conditioning problem. For drilling the hard formations, where it is not necessary to build walls, operators are anxious to use as light a fluid as possible, it being their belief that use of lighter fluid permits faster drilling. However, if too light a fluid is used and it contains too high a water content, it will tend to wash away the walls previously built up through the Nacatoch sands and cause them to cave. Thus, a balance between the heavier, higher colloidal content mud, and the lighter fluid is sought.



Mixing machines used to prepare mud for drilling purposes in the Rodessa area

The casing program generally followed in the earlier development of the field consisted of between 400 and 700 feet of 13⅜-inch surface pipe; approximately 5,000 feet (to base of anhydrite) of 8⅝-inch casing; and a final string of 5¾-inch casing in the top of the pay horizon. For the 8⅝-inch pipe, 9⅞-inch hole was drilled, and for the 5¾-inch casing, 7⅞-inch hole was drilled.

However, more recently, in most instances a larger casing program has been adopted, including a protection string of pipe being run soon after the penetration of the Nacatoch formation. In this program, 9⅝-inch casing is being used to replace the 8⅝-inch pipe formerly run, and 7-inch is being used instead of the original 5¾-inch flow string. Drilling of larger hole through the anhydrite as provided

in the new casing program is of particular advantage in that larger and heavier bits can be used. This facilitates drilling in such formations as the larger bits stand up better than the smaller ones formerly used.

The Oolitic lime horizon underlying the anhydrite, and in which the production is found, is easy digging but in it considerable trouble is experienced by operators in getting back to bottom with the bit after coming out of the hole, and in running casing and cementing. By a peculiar condition, drilling mud gels and solidifies rapidly in the bottom of the hole, and it is with extreme difficulty that it is removed.

Operators are not agreed as to the cause of this situation. Some are of the opinion that under the conditions which exist in this formation the water content of the drilling fluid is segregated and absorbed by formation, leaving the mud and the cuttings as a solid in the hole. The formation is very porous and honeycombed, not in large openings or crevices but in small, fine pores. Another peculiarity is the exceptionally high bottom-hole temperature, which is around 195 degrees. Bottom-hole pressure is 2,495 pounds.

Other operators offer a theory that possibly the formation, in being drilled, breaks off in pieces too heavy to be brought to the surface in the returns, and that these accumulate in the bottom of the hole. However, what actually takes place in respect to the drilling fluid under such temperatures and under pressures of 3,100 to 3,200 pounds at the bottom of such holes (6,000 feet) is open to speculation.

The problem, it is agreed, is one of providing a suitable drilling fluid. It is recommended by some operators that the fluid be as near water as is expedient to make it. In this it is argued that although there is an infiltration of water into the formation there will be very little mud to gel and some of the water will be returned to lift the cuttings. On the other hand, there are those who are of the opinion that as the formation seems to absorb the water, there should be as little free water in the fluid as possible.

At present, it is necessary to jet the casing to bottom, fluid being pumped down through the casing at pressures designed to wash the drilling mud from the bottom of the hole as the casing is lowered. This sometimes is a difficult and slow task. Cementing also is handicapped by the caking mud.

Various practices are followed in drilling and setting in the Oolitic lime formation. Some operators drill into the top of the formation, set and cement the flow string, and then core for the pay. Others drill the formation before running the casing. Wells are produced either with or without perforated liner. In the use of perforated pipe, some are set in a one-string job on the casing, while others are set later and sealed off to the casing with the upper or gas zone blanked off. When the formation is drilled before casing is run, this casing usually is seated through the gas zone. One well is producing through perforated tubing. In this case, no perforated pipe was set and the tubing was run with bottom between 3 and 4 feet below the casing seat. This portion of the tubing was perforated.

In United Gas Public Service Corp.'s oil discovery well, the setting consisted of 480 feet of perforated pipe run on the bottom of the 5¾-inch casing and cemented in a one-string cementing job. Although this setting was successful, it has not been considered advisable to make any more settings of this type. In such long sections of perforated pipe there is a hazard when setting the pipe down of cracking the cement lining, which would allow the escape of the fluid and pressure and prevent the jetting of the casing to bottom. Also for oil wells, operators now are attempting to blank off more of the upper gas horizons. In most wells now being completed not more than 35 to 40 feet of pay is being taken in. Wells closer to the supposed water table are taking in much less than that, some as little as 10 to 12 feet.

Cement and Asbestos Pipe

The purchasing agents of Tulsa and their guests were entertained and instructed at the monthly meeting on Tuesday night, March 24, by an illustrated lecture given by C. A. McGinnis, of the Johns-Manville Co., of New York City, on Transite pipe.

Transite pipe is made from a mixture of asbestos and cement. This slurry is poured into molds and pressed into short lengths of pipe under very high hydraulic pressure. This forms a dense homogeneous structure and after these sections of pipe are properly cured they have many properties not found in ferrous pipe.

In the oil industry the Johns-Manville Co. has made an installation of this pipe to handle salt water from tanks to disposal wells in the Raymond pool in Kansas, where salt water is highly corrosive.

Pacific Group A.P.I. Production Division Announces Program

Hon. Leon R. Yankwich, U. S. district judge of southern California, will be the principal speaker at the dinner to be held in connection with the annual spring meeting of the Pacific Coast section of the American Petroleum Institute Division of Production on April 14. Judge Yankwich is familiar with developments in the oil industry, having rendered decisions in several recent cases arising from producing problems, and his remarks on "The Courts and the Changing Industrial Scene" will be of interest to all men in the industry.

The other speaker will be F. E. Foster, managing director of the California Oil and Gas Association. His subject will be, "Tentacles of Oil Taxation." The annual election of district officers and members of the advisory committee will also be a feature of the evening's program. Bruce Barkis, of the Rio Grande Oil Co., who is concluding his second year as chairman of the Pacific Coast district, will preside.

It is expected that 600 oil men will attend the dinner, which will be held at the Jonathan Club in Los Angeles. In addition to the evening meeting, technical sessions will be held during the day at the Southern California Edison Co. Auditorium, and will be presided over by H. E. Winter, Union Oil Co., and Bruce Robinson, General Petroleum Corp.

Following are committee chairmen in charge of plans for the meeting: Charles T. Reichert, National Supply Co., arrangements; W. C. Whaley, Barnsdall Oil Co., program, and R. D. Copley, Standard Oil Co., nominations.

All men interested in the oil industry are invited to attend the technical sessions and the dinner, whether or not they are members of the Institute. Dinner tickets are available at the Los Angeles office of the American Petroleum Institute, 510 West Sixth Street, Room 1217. No charge will be made for admittance to the technical sessions.

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MEET THE CHIEF ENGINEER

Given the distinction of supervising the operation of a new 85-horsepower atomic diesel aboard the vessel "Veimauri" of New Guinea, this gentleman was schooled in the use of oil and given the title of chief engineer. Photo supplied by Petter's Monthly News of England.

A.A.G.P. Presidential Address

(Continued from Page 44)

no more like it in size. Certainly such a pool will never be found under our present geological methods except by accident. Yet there is hardly a producing or nonproducing district or state from Pennsylvania to California underlain by sedimentary rocks in which untested porosity wedges are not present, and in many places they can be shown to be on a scale equal to that of the East Texas area. As far as I know, there is no geological reason why we may not look forward with confidence to the ultimate discovery of not one but several pools comparable in size with the East Texas field.

These three stratigraphic type occurrences of oil are all closely related in principle, differing chiefly in size. Thus, the flank production at Spindletop, the Simpson flank production at Oklahoma City and the East Texas production down the west flank of the Sabine uplift have much in common in type of geologic history and in conditions of occurrence, and each should be susceptible to discovery by geologic methods. One does not appreciate the possibilities of this sort of geology until time and thought have been given to it, and I venture to say that upon investigation you will each of you reach the conclusion, as I have, that there are yet to be discovered oil and gas reserves almost without limit by those who may become adept in stratigraphic analysis.

When hunting elephants one needs elephant guns. The elephant guns of stratigraphic oil discovery are, first, a liberal drilling policy, followed, secondly, by the most careful and complete sampling of the drilled formations that is possible. The accurate analysis of these samples, the correlation and comparison of the results in the form of sand maps, paleogeologic maps, cross sections, overlaps, isopach maps and geologic history are the ammunition we will need. The working out of a technique which will permit us consciously to prospect for reserves of the stratigraphic type will require much cooperative effort, free exchange of information and an intelligent patience on the part of geologist and operator alike.

Differing from our past methods, the possibilities for stratigraphic production cannot be quickly exhausted and the final story of oil in most districts will not be written for many years yet to come. Geophysics will be of assistance, but its chief application will be in detecting thin wedges of sediments and of porosity changes, an application which is not now made. The surface geology of many areas can be reworked, with emphasis on stratigraphic variations rather than surface structure and the results in terms of oil discovery may be of even greater value than our earlier structural studies. Much of our past petroleum geology has been concerned with "high" and "low," whereas I foresee a change to "present" or "absent." The basis of the first is engineering, the basis of the last is pure geology.

In conclusion, may I offer the personal observation that the day of geology, as applied to the practical problem of discovering a continuing oil reserve for our nation, is just dawning. There can be no doubt that an abundance of oil in terms of national demand remains to be discovered. The discovery of this oil is not going to be easy and offers a real challenge to each of us. Our future is limited only by our ability to reason geo-logically and the foundation for such reasoning is a real knowledge of geology, more geology, and then still more geology.

Magnetic Storm

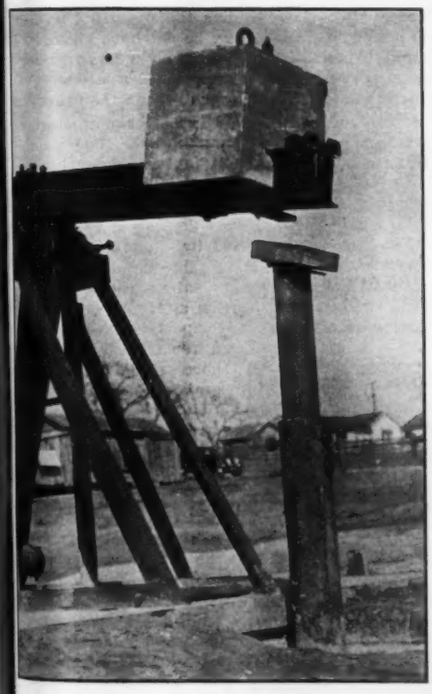
Tucson, Ariz., observatory of U. S. Coast and Geodetic Survey report a moderate magnetic storm started March 19 at 9 p.m. (C.S.T.) and ended at 2 a.m. (C.S.T.) on March 24. Telegram reads:

"Moderate storm began nineteenth. Twenty-one. Ended twenty-four. Two. Central Time."

OPERATING IDEAS

Headache Post for Jack

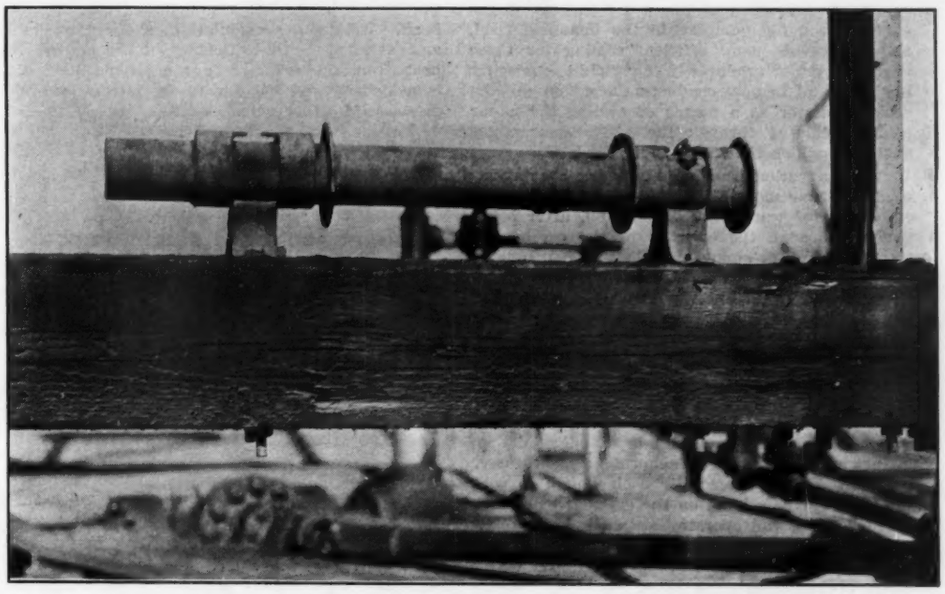
Having need for counterbalances on pumping jacks being powered from back side crank equipment, an operator in the Seminole, Oklahoma area has also installed a headache post under the back end of the jack beams to protect the jack in case of breakage of the sucker rods close to the surface. In case the sucker rods should break close to the surface the additional weight of the counterbalance block on the back end of the jack beam would cause that part of the beam to drop rapidly and beyond its normal operating arc and possibly damage the surface equipment. This headache post is so constructed that it may be taken apart when the front end of the beam must be raised out of position and out of the way



when pulling rods or tubing. When such operations are started the two bolts seen near the top of the bottom section of the post are removed and the upper section of the headache post is taken out of the lower section, thus permitting the lowering of the back end of the jack beam. When the well is put back on production the top of the headache post is quickly and easily set back into position and the bolts replaced. The top of the headache post is provided with a wood block to act as a cushion for the jack beam to strike in case of accident. The headache post is constructed of junk pipe and bolts. It is footed in a reinforced concrete foundation base set below grade line.

Shop-Made Emergency Derrick Winch

The accompanying photograph shows a small shop-made winch used in the Oklahoma City field. When wells were completed in that field all drilling tools were removed from the location, and with subsequent cleaning up around the rig there was usually nothing available to do small hoisting jobs when needed. These hoists were made to be used in case of emergency and to lift what equipment it might be necessary to move in changing connections on the flowing hook-up used on the well. The main shaft of the winch is a piece of 4-inch pipe and the bearings and support are fashioned from a piece of pipe slightly larger than the 4-inch. The 4-inch extends outside the bearing on the left sufficiently to allow placing a pair of chain tongs on it for rotative power, a section of sand



line being left over the derrick at all times. By making three or four wraps around the 4-inch shaft and holding the free end of the line it may be handled in the same manner as a cathead, or the line may be fastened directly to the shaft. The shaft has four holes cut through it at the bearing on the right through which a bolt may be placed to hold the shaft at any desired place by keeping it from rotating. The spacers or dividers were cut from plate steel and welded in place. The winch in the accompanying picture is mounted on a derrick framing sill between two concrete derrick corners and is left at the well permanently.

Converted Steam Pump

Faced with the problem of moving oil from a lease by using a back side crank for power because of the discontinuance of steam power a superintendent for one of the large crude oil purchasing companies in the Mid-Continent converted the steam pump used with the steam power to a power pump to be driven from a stroke post powered from a back side crank on a standard rig front. His method of changing the steam pump to a power pump was to remove the heads of the steam cylinders and weld extensions to the piston rods, leaving the pistons intact to act as guides for the rods. The extensions welded on were of sufficient length to permit welding a cross head on them and have clearance between the cross head and the cylinder body of the pump. A universal joint was then welded to the cross head permitting the attaching and detaching a pitman which connected the pump to a stroke post. The reciprocating motion delivered to the stroke post transmitted to the pump through

the pitman causes both pistons of the pump to travel in the same direction at the same time. Capacities of 60 bbls. per hour are not uncommon with this pump when running at the moderate pumping speeds usually used to produce the well from which the pump obtains its power. The pump is bolted to a pipe and angle iron base which is securely anchored to a concrete foundation. The only other change necessary to complete the job was the addition of the two drip oilers seen on the steam cylinders in the accompanying cut. These oilers supply lubrication for the steam pistons now acting as guides.

Radiator Cooling System for Pumping Engines Proving to Be Successful

By HAROLD K. IHRIG

In an effort to overcome precipitation of carbonates in the water jackets of gas engines used for pumping in the Seminole field, and to provide more efficient cooling for those engines, a major producer in that field has recently installed and is now conducting tests on an air-cooled radiator as a means of cooling the water being circulated through the 40-horsepower gas engine on which the test is being made.

The conventional method of cooling gas engines used as prime movers in pumping oil wells is by circulation of water taken from and, after being pumped through the cylinder of the engine, returned to a water supply tank located just outside the engine house. These tanks vary in size, dependent upon the size of the engine for which they are used, but are usually the open top, wood stave and bottom tank of 250-bbl. capacity. In most cases where this procedure is followed the engines run fairly cool, and it is usually taken for granted by most operators as being sufficient. Thermometers installed in such places in the circulating system, as may be done easily, have indicated that engines are not running at abnormal temperatures, and since they are generally cool enough to permit one to place a hand on the cylinder or on the cylinder head, the operator naturally thinks his engine is running cool enough, which with the proper amount of lubrication should keep the engine operating in good order.

There are, however, a number of factors to consider in this procedure other than merely pumping water through the cylinder jacket. In some instances a normal volume of water is put through the system and from all indications mentioned above the engine is being adequately cooled, but such conditions as scaling of the inside of the water jacket will not permit the water to absorb the heat generated by the expansion of the gases within the cylinder and the friction set up by a fast traveling piston, which may or may not be properly lubricated. The load under which the engine is operating is also a vital factor in the summation of the operating characteristics of the engine. An overloaded gas engine will, in most cases, tend to overheat because of an inadequate cooling capacity for the work being done within the engine. Preignition is another cause of overheating, but may be eliminated by proper observation and adjustment.

Perhaps the most important and most universal cause of overheating in gas engines, and the one reason for the great number of repair jobs necessary to engines so affected, is the deposition of calcium carbonate scale within the water jackets of the cylinder and cylinder head. With the accumulation of an appreciable amount of scale the efficiency of the transfer of heat from the cylinder to the circulating water is materially reduced due to the insulating effect presented by the scale.

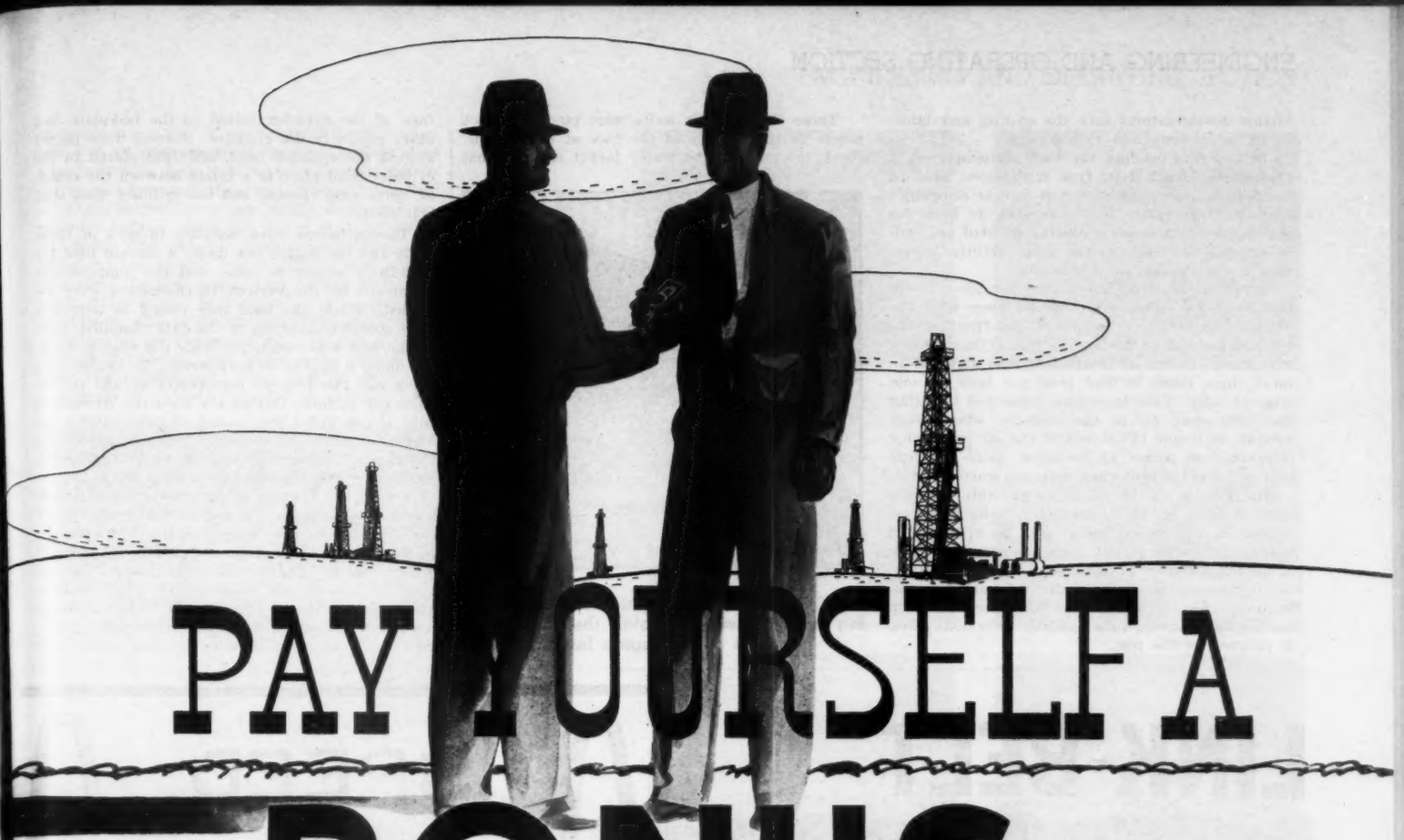
Various methods have been tried for the removal of this scale, either periodically or continuously, and the results have varied widely as to success. One method is to "treat" the cylinder water jackets with hydrochloric acid, which is accomplished by any of several different methods which will vary from one operator to the next. Some operators merely disconnect the water intake and discharge lines from the cylinder, plug the inlet connection on the bottom of the cylinder or head and fill the water jacket of the cylinder and head with hydrochloric, or as it is sold commercially, muriatic acid. The acid will immediately attack the calcium carbonate scale, which is changed by the chemical action with the acid into calcium chloride, carbon dioxide and water, the first two being soluble in the latter. As the acid becomes depleted it is drawn off and new acid added to the water jacket, and by continuation of this process it eventually removes the scale. This method is expensive and not used to any great extent for that reason but, withal, is effective only as a cure and not as a preventative. It should be pointed out here that this treatment is effective only when the scale present is a carbonate, and operators should take the precaution, before attempting such treatment, to determine that the scale to be treated is a carbonate scale and not a sulfate, as the hydrochloric acid will not react with the sulfate. Should this treatment be made with sulfate scales the acid will not react with the scale but will react with the iron in the cylinder body where it has the opportunity, and such action will, of course, be detrimental, and if allowed to remain within the cylinder over too long a period, with each successive attempt to remove the scale, will eventually ruin the cylinder.

The endeavor to eliminate scaling of cylinder water jackets by the installation of a closed system of cooling and the tests leading to perfecting the installation are discussed in this article.

Several of the larger chemical manufacturing firms have prepared and put into the field water-treating compounds intended for universal use as being capable of suspending those solids in water causing the accumulation of scale in engines. The success of these compounds depends a great deal on the solids being carried by the water, and as the water varies from one field to the next, so does the ability of the water-treating compounds to keep the solids in suspension and not permit precipitation. Several of the compounds have enjoyed a remarkably universal success and are in general use throughout the fields.

Overheating of engine cylinders may be attributable mainly to two causes: The accumulation of scale within the water jackets of the cylinders and poor lubrication. The latter is mentioned for the reason that, although a sufficient quantity of oil may be injected to the piston and cylinder, there is no definite assurance that it is supplying adequate lubrication to the bottom of the piston, since most engines in use today in the fields have the cylinder lubrication on the top of the cylinder. A major operator in the Seminole field recently made exhaustive tests on a typical engine and found that the bottom of the piston was not being lubricated as thoroughly as needed, and in an attempt to find additional reasons for the overheating, or insufficient cooling, of their engines made even

Fig. 1—Interior view of an engine house located in the Seminole field, showing water pump, method of powering pump and fan and discharge duct around radiator unit



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further investigations into the cooling and lubricating of pistons and cylinders.

In order to conduct the tests contemplated, a gas engine identical in type with those used in the field was set and connected in that company's machine shop, where it was possible to keep the engine operating under a continuous load and still be conveniently close to the shop facilities necessary to run the test to completion.

Two additional oil inlets were put into the engine cylinder. These were placed even with the original inlet with reference to the front of the cylinder and spaced 120 degrees around the cylinder. The same amount of lubrication was supplied to these three inlets as had been put into the one original inlet. This procedure permitted injecting the lubricating oil to the cylinder where most needed, as it put two-thirds of the oil in at such advantageous points as to allow more efficient lubrication of the piston and cylinder where needed.

In addition to the oil inlets put into the cylinder a total of 42 thermometer wells were installed in the water jacket of the cylinder at various points to permit taking accurate records of the temperatures of those points during the time the engine was operating under the various loads imposed upon it and during the circulation of cooling water through the cylinder at various rates in progress of the test.

These thermometer wells were placed at such points as the vicinity of the face of the exhaust chest, the ends of the water jacket close to that face of the cylinder bolted to the bed-plate and other points in the cylinder. Several were placed around the cylinder head, six were placed in the cylinder head plate in a circle between the center or spark plug opening and the cylinder head stud bolt circle.

Fig. 3—Exterior view of engine house showing method used to install the radiator in the side of the engine building

Thermometers were installed in each of these wells and the engine put under a certain load for a definite length of time, and the temperatures registered by the various thermometers were recorded. While the load was varied to permit a more complete analysis of the data compiled, most of the test was conducted with the engine working under a load of 40 horsepower, the engine used being one rated at 40 horsepower at 180 revolutions per minute. During the tests the circulation rate of the water was varied to some extent, but while the engine was running under its rated load the flow of water was kept as near that recommended by the manufacturers as possible.

During the running of these tests the engineers found that, although the engine ran at apparently normal temperatures, several of the thermometers, in those wells in the crank end of the cylinder, the vicinity of the exhaust chest and close to the air-starting connections, showed the water temperatures to be running considerably higher than the discharge temperature of the circulating water. Several of these wells were in such places that

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temperatures of 200° F. were recorded, while those just a short distance from the high temperatures were recording temperatures that were to be expected and were not abnormal. These "hot-spots," or areas within the water jacket that were apparently isolated from the direct flow of water, will be the first to cause precipitation of the solids being carried by the water, and as this scaling progresses the heat within that section of the cylinder will continue to increase until it reaches a point that will prove to be detrimental to the operation of the piston and the cylinder, with attendant trouble in form of excessive piston ring wear and replacement. Accompanying such difficulties is an excessive amount of cylinder wear

Fig. 2—Side view of air cooled radiator and discharge air duct installation

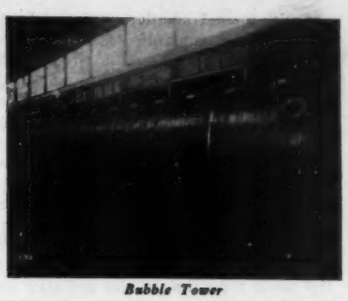
and scoring, which may be attributed to some extent to faulty or insufficient lubrication, but, in either event, an expensive operating item.

Another interesting discovery made during the progress of the tests was the change in temperatures in the water course in the cylinder head of the engine when the head was turned 180 degrees so that it was in an inverted position. The reason for the change made in the position of the head with reference to a horizonal axis was that the thermometer wells in the head and head plate showed temperature readings that covered a range of about 20° F. when the head was installed in the conventional manner, and when the head was rotated as stated the temperatures were found to be practically the same at all points and approximately equal to the lowest temperatures found when installed in the original position.

The operators felt certain reductions could be made in cylinder rebore jobs and parallel engine maintenance expense by the elimination of the scaling of the water jackets of the cylinders of the engines and by more efficient lubrication. To assist in the realization of this contention it was decided to install a "closed system" of water circulation, or one in which the water was not aerated for cooling but was cooled in a relatively small air-cooled radiator, the design of which parallels that used on automotive type motors. By using this type cooling the water would not come in contact with the air at any time, but would be cycled from the radiator by means of a centrifugal pump through the engine and back to the radiator for recooling.

The cooling unit installed was a Sturtevant gas-engine cooler, which was designed for heavy-duty engines. It operates on a closed system and eliminates the old open circulating water tank. The unit used on this initial installation was designed for the standard 40-horsepower, 180 revolutions-

De-Propanizer Tower



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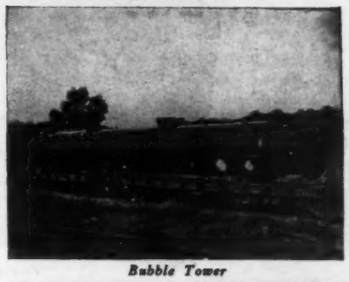

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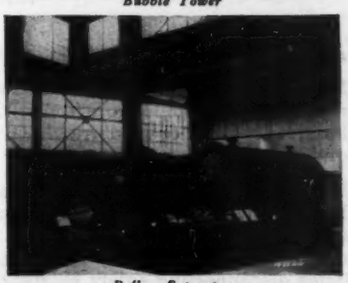

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per-minute and smaller engines. It will maintain an optionally controlled water temperature, leaving the engine jacket at approximately 40° above the outside air temperature under usual operating conditions. It is driven from the reverse clutch shaft of the engine by V-belts, three belts being used. These three belts have from two and one-half to three times the capacity encountered in normal loads. The unit is provided with a belt idler to absorb the impulses from the engine and to take up the slight slack allowed for installation.

The cooling coil is made entirely of noncorrosive metals. The headers and tubes are of copper and the plate type fins of the radiator are aluminum. The tubes are brazed into the headers and all joints are leak-proof. The coil is installed in the unit in such a manner as to adequately take care of expansion and contraction.

The pump used to circulate the water through the radiator and the engine jacket is a small centrifugal, direct connected to the fan-propelling shaft, and is rated at 22 gallons per minute when the engine is running at 150 revolutions per minute. Figure 1 is an interior view of the engine house, showing the entire unit with the exception of the small water reservoir, which is located on one of the roof trusses of the engine house and which has a capacity of about 5 gallons maintained under an oil seal. This picture shows the V-belts, water pump, and inside the discharge duct may be seen the frame which holds the bearings supporting the large six-blade fan.

The large galvanized-iron discharge duct shown built around the unit is not part of the regular equipment furnished with the unit but was built by the operator to discharge all air pulled through the radiator out through the roof of the building. Figure 2 is another view of the unit, also showing how the radiator is installed in the side of the building. A small section of the galvanized iron siding on the building was cut away to allow the radiator to fit into the wall nicely. This permits pulling fresh air into the radiator from the outside and at the same time places it in such a position as to be accessible and out of the way.

Figure 3 is a close-up view of the radiator in the side of the engine house. The superintendent took the added precaution to cover the front of the radiator with a protecting covering of one-fourth inch mesh galvanized wire. The wire is securely fastened to a frame made from a section of old sucker rod which is anchored to the building.

This unit was installed September 1, 1935, and has been in operation continuously since that time. The entire water system, including all piping and connections, has a capacity of only 30 gallons, and since installation it has been necessary to add only

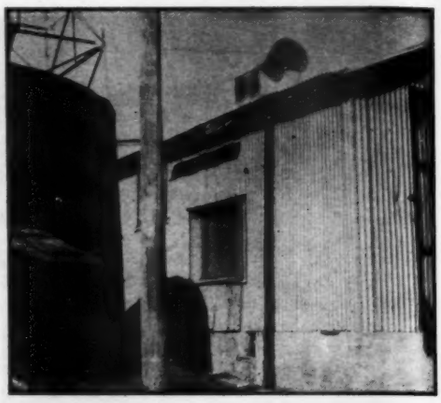

Fig. 4—View of engine house showing discharge end of air duct on roof of the engine house and radiator in side of building

5 gallons of make-up water. This may be attributed to the fact that the system was protected with alcohol as an antifreeze during the cold weather experienced this past winter, and due to small leaks a small amount of evaporation was experienced which may have been preventable, but being so slight was disregarded.

This small amount of make-up water added is one of the paramount features of such a system. When considering that during weather as warm as the first month the unit was installed it is usually necessary to add about 5 bbls. of make-up water per day to the conventional cooling system employing an open-top tank like the 250-bbl. tanks being used so universally, the small amount of water added to the air-cooled unit described in six months of operation is a saving worthy of note. This condition would be most noticeable during the lengthy drouths that are generally experienced during the summer months in this particular locality, while not affecting every operator, at times have brought about such shortages in water supply that continued operations were threatened. Those operators being fortunate enough to have an adequate supply of usable water from an underground source cannot appreciate the great number of operations that are dependent upon impounded surface water from which cooling water must be secured. Disregarding the availability of an adequate supply, water production and distribution costs are not to be overlooked, which when added to the normal evaporation and leakage make cooling water costs an important item in the profitable production of oil.

The cost of these units is such that one may be purchased for about the same expenditure necessary to buy and set one of the wood tanks used in the conventional cooling systems. The amount of connection work necessary to connect the two systems is comparable, with the radiator exceeding the other the small amount necessary to add the air-discharge duct shown in Figures 1 and 2, and the cupola or head built on the duct outside the roof of the building, as shown in Figure 4, which is an exterior view of the engine house. Note the short eave trough installed directly over the radiator opening in the side of the engine house to divert the flow of rain water falling on the roof from falling down in front of the radiator and being pulled inside the engine house by the air current set up by the fan.

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Chemical Processes in Refining of Petroleum Distillates

By JACQUE C. MORRELL and GUSTAV EGLOFF
Research Laboratories, Universal Oil Products Co.

A series of tests were made upon cracked gasoline from Santa Fe crude oil. The 400 endpoint cracked gasoline was first treated by the split caustic method using 4, 7 and 10 pounds of 93 per cent sulfuric acid and treating with caustic soda solution before and after the acid treatment. The treated gasoline was rerun with fire and steam with an upper still temperature of 350° F. in the liquid and then sweetened with sodium plumbite. The results of these treatments before and after sweetening are shown in Table 17.

Further treats were made upon the cracked gasoline by the following methods:

1. Overhead Treat—(50 per cent O.H., 50 per cent bottoms—6 pounds acid sweetened). The raw gasoline was distilled to remove overhead a 50 per cent light cut which was not treated. The bottoms were acid treated by agitating with 6 pounds of 93 per cent sulfuric acid per barrel, neutralized with a caustic soda wash, and rerun with fire and steam, limiting the still temperature to 350° F. The overhead cut and treated bottoms were blended, sweetened with 3 per cent of 16° Baume sodium plumbite, and the properties determined.

2. Overhead Treat—(45 per cent O.H.—1 pound acid, 55 per cent bottoms—5 pounds acid, sweetened). The raw gasoline was distilled to remove overhead a 45 per cent light cut which was acid treated using 1 pound of acid per barrel and neutralized. The 55 per cent bottoms was acid treated using 5 pounds of acid per barrel and neutralized. The two treated products were blended, rerun, and sweetened as in the previous treat.

The results of these treats, with the properties of the untreated blend, are shown in Table 18.

In the extensive investigation on the effect of sulfuric acid in the treatment of cracked distillates by Morrell and Egloff[1] referred to, the following summary and conclusions were drawn, which practically shows all of the factors involved in this treatment:

1. In the treatment of cracked distillates, the acid sludge-acid ratio, or the relative volume of acid sludge formed to sulfuric acid used, increases practically as a straight line function of the temperature.

2. The acid sludge-acid ratio increases with increase in sulfuric acid concentration.

3. The acid sludge-acid ratio decreases somewhat with increasing amounts of sulfuric acid of constant concentration between temperatures of 5° F. and 100° F.

4. Many cracked distillates show an increase in sulfur content with increase in boiling point to a maximum, after which the sulfur content decreases.

5. Increase in concentration of acid increases solution loss and polymerization.

6. Reduction of solution loss is appreciable with reduction in temperature, but is substantially less than the decrease in polymerization.

7. Polymerization is a function of all three variables, quantity and concentration of acid and temperature. The decrease in polymerization with decrease in temperature is very marked.

8. In general, treatment of cracked distillates at low temperatures shows a substantial saving in losses of distillate, particularly in respect to polymerization or conversion of gasoline into high boiling components.

9. The degree of desulfurization increases with increase in concentration of acid.

10. Sulfuric acid of 98 per cent concentration is recommended for refractory distillates requiring drastic treatment for desulfurization. A saving in quantity of acid and cost will result.

11. Desulfurization depends to a great extent on the character of sulfur compounds, both in respect to the type of distillate and the particular fraction of the same distillate treated.

12. The degree of desulfurization is in general increased by pretreatment of the distillate with caustic or plumbite solutions before acid treatment.

13. Treatment of cracked gasoline with sulfuric acid in general reduces the octane number.

14. The gum content of cracked gasoline decreases with increasing amounts of sulfuric acid of constant concentration and also with increasing concentrations of acid.

15. The color of cracked gasoline improves with increase in amount of sulfuric acid, usually to a maximum, and then may drop off when it is overtreated. The color also improves within limits with constant amounts of acid of increasing concentration.

Aside from the exceptions noted, cracked distillates are usually redistilled in the presence of steam after acid treatment. The precautions to be taken during distillation have been pointed out by Morrell.[2]

It is not the purpose of this paper to go into a discussion of treating and rerunning equipment, but it may be said that aside from the tendency to eliminate or minimize treating as well as rerunning as a separate operation the general principles, operations and apparatus remain practically the same[2] except for very marked improvements in specific methods and apparatus. More efficient mixing and proportioning equipment has been designed for treating as well as in devices for separating sludge acid, such as the desludgers which are packed with solid material showing a preferential wetting by the sludge and permitting more rapid and complete separation of the same. Distillation apparatus has been improved very considerably along the lines of more efficient heat transfer and better temperature control. In this respect, combination units involving steam and vacuum distillation with highly efficient fractionating columns are now extensively employed.

Peroxides, aldehydes,

This article is a continuation of a treatise by Doctor Morrell and Doctor Egloff in which methods of refining petroleum distillates are described. The first portion appeared in the March 19 issue of The Oil and Gas Journal, and the remainder is to be published in subsequent issues.

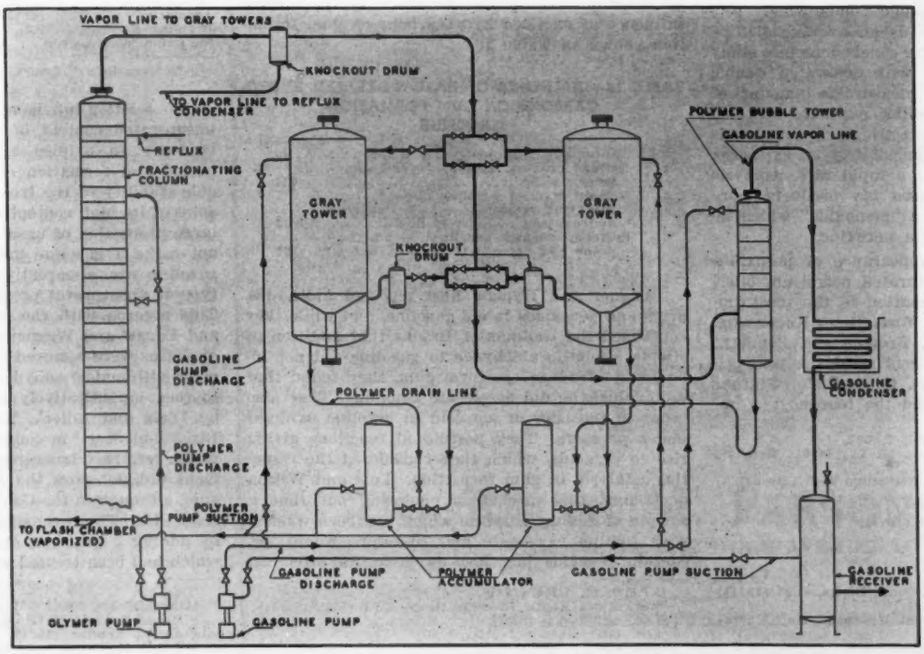

Fig. 3—Flow diagram of the Gray process used in treating petroleum distillates to control gum content and color, showing a series parallel arrangement of the Gray towers

[1] World Pet. Congress (loc. cit.).

[1] J.I.E.C., Vol. 18, pp. 733-38 (1926).
[2] See Morrell and Bergman, Chem. and Met. Eng., April, May and June, 1928, and Morrell, N.P.N. (loc. cit.).

acids and gums.—One of the most important problems in the storage and sale of cracked gasolines is the maintenance of its desirable properties and the prevention of deterioration, particularly in respect to color and gum formation and antiknock properties. The formation of gum-like substances in cracked gasoline is undesirable because it interferes with the operation of the motor from the gasoline tank through the feed lines, carburetor, manifold and intake valves. The formation of color is undesirable mainly from the sales viewpoint. The deterioration of the antiknock properties is objectionable since it reduces the available energy in the gasoline under high pressure combustion conditions. This deterioration generally is associated with oxidation phenomena occurring in storage and a large amount of study has been devoted to it.

In 1852 Schonbein[1] recognized that turpentine, on exposure to oxygen, formed some compounds of strong oxidizing power. In succeeding years, other unsaturated substances were found to react with oxygen and form highly reactive products. No mechanism of the reaction gained general acceptance until almost simultaneously Engler and Wild[2] published the theory that by direct addition of an oxygen molecule to an unsaturated molecule a peroxide or "moloxide" was formed. In 1904 Engler and Weissberg[3] again presented this mechanism in a review of auto-oxidation, and drew evidence to support it from their own work and that of others on a number of compounds, including amylene, hexylene and fulvenes. They concluded that "most unsaturated hydrocarbons add oxygen more or less easily, with primary formation of peroxides and then further reaction products." The work done on auto-oxidation since this publication has been reviewed by Milas.[4]

Olefinic hydrocarbons differ widely in their reactivity with oxygen. Wagner and Hyman[5] showed great variation in the rates of oxidation of the isomeric amylenes by air in the presence of an oxidation catalyst.

A number of investigators have found that di-olefins containing conjugated double bonds oxidize and produce peroxides much more readily than olefins of other types. Thiele[10] showed that fulvenes absorb oxygen and resinify with extraordinary rapidity. Birch and Scott[11] stated that conjugated di-olefins oxidize much more readily than simple olefins. Cassar[12] reported that his accelerated oxidation test "did not affect simple olefins, but only di-olefins." Flood, Hladky and Edgar[13] found that "di-olefins as a class are markedly less stable than mono-olefins, but the position of the double bonds is important in determining stability. Conjugated double bonds introduce extreme instability, while a compound containing double bonds widely separated is almost as stable as an average olefin." Kogerman[14] arrived at similar conclusions in a study of the hexadienes. Those with separated double bonds did not absorb a measurable amount of oxygen during several months' exposure at room temperature. The isomeric conjugated compounds began to absorb oxygen immediately on exposure, and oxidation continued at a rapid rate. Analysis indicated that in two cases his products were peroxides and in one case a "monoxide" which he believed had formed from a peroxide.

Brooks[15] reported the appearance of peroxides on air oxidation of "unsaturated petroleum oils," and stated that their formation is the most important reaction in gum formation. Kogerman,[14] Mardles and Moss,[17] Story, Provine and Bennett,[18] and Wagner and Hyman[19] confirmed the presence of peroxides in old gasoline. Cassar[20] showed that peroxidized olefins increased the tendency of unstable cracked distillate to gum formation. Yule and Wilson[21] developed a rapid quantitative method for the determination of peroxides in cracked gasoline.

Smith and Cook[22] obtained evidence of aldehydes in aged cracked gasolines and considered them primarily responsible for the formation of gum. Story, Provine and Bennett[18] detected peroxides, acids and aldehydes in gasoline which was being evaporated in a copper dish and in gasoline exposed to sunlight. They came to the conclusion that "the products of the oxidation appear to be principally peroxides, with acids as the chief end product, making up the gum." Yule and Wilson[21] showed that the peroxide method which Story, Provine and Bennett[18] used determined only a small part of the total peroxides in the gasoline. Brooks[15] stated that peroxides, aldehydes, alcohols and ketones "could easily be detected in samples of cracked gasoline which have become slightly oxidized." He reported the identification of formaldehyde, acetaldehyde, propionaldehyde and butyraldehyde in old gasoline. The aldehydes formed, he believed, by the reaction of peroxides with olefins and opposed the conclusion of Smith and Cook[22] that aldehydes are intermediate in gum formation, as he found that addition of aldehydes to gasoline being evaporated did not increase the amount of gum formed. Brooks[15] considered that gum was largely a mixture of peroxides, although the gum formed after a long period of storage contained acidic substances. He also demonstrated the marked influence of oxidized hydrocarbons on gum formation shown in Table 19.

TABLE 18—RESULTS OF TREATS AND PROPERTIES OF UNTREATED BLEND

Treatment—Type	Untreated	Overhead	
Treatment number		1	2
Overhead:			
% by volume of raw overhead		50	45
Acid, lbs./bbl.		None	1
Bottoms:			
% by volume of raw bottoms		50	55
Acid, lbs./bbl.		6	5
Overall:			
Acid, lb./bbl.		3	3.2
Sodium plumbite sweetened			
Finished cracked gasoline:			
% raw gasoline	100.0	97.7	97.0
Analyses of treated products:			
Gravity, deg. A.P.I.	60.6	60.8	62.3
Color, deg. Saybolt	Red	24	26
Color stability*		19	18
Odor		Good	
Doctor test	Pos.	Neg.	Neg.
Gum, mgs./100 cc. (copper dish):			
Without inhibitor		6	8
With 0.025% Universal inhibitor			11
Apparent sulfur, %			
True sulfur, %	0.56	0.44	0.38
Chlorine, %			
Oxygen bomb stability, induction Period, minutes:		1	2
Without inhibitor			60
With 0.025% Universal inhibitor		285	135
Octane No.—Motor	72	71	71

*Color, deg. Saybolt, after exposure equivalent to two hours' noon June sunlight.

TABLE 19—INFLUENCE OF EASILY OXIDIZED HYDROCARBONS ON GUM FORMATION GASOLINE

Expt.		Mg./100 cc.
1	Straightrun gasoline + 2% limonene	46
2	Refined cracked gasoline + 2% limonene	634
3	Refined cracked gasoline alone	7
4	Straightrun gasoline + 5% isoprene and exposed to light 48 hours	52
5	Refined cracked gasoline + 5% isoprene and exposed to light 48 hours.	521

Wagner and Hyman[19] also reported aldehydes, acids and peroxides in old gasoline, and while they confirmed the findings of Brooks that addition of simple aliphatic aldehydes to gasoline did not increase its tendency to form gum, they found that crotonaldehyde did accelerate gumming. They also reported the odor of acrolein in gasoline oxidized under pressure. They postulated reactions giving rise to peracids, which they considered the essential catalysts in gum formation. Yule and Wilson questioned this mechanism, pointing out that a sample of gummy gasoline which had been washed with sodium carbonate and therefore would not contain peracids has just as great an effect in accelerating gum formation in freshly cracked gasoline as if it had not been washed.

Mardles and Moss[17] stated that "the process of gumming appears to be initiated by the primary formation of organic peroxides, and the products of oxidation other than peroxides, namely, aldehydes, ketones, acids, etc., were found to have no accelerating effect on the gum rate."

Hoffert and Claxton[23] have reported that aged benzol containing unsaturated hydrocarbons shows the presence of peroxides, aldehydes and acids.

These earlier studies were largely qualitative in nature.

Morrell, Dryer, Lowry and Egloff[4] studied the rates of formation of peroxides and gum quantitatively in a number of samples of gasoline by bomb oxidation and in storage. From these rates some idea of the mechanism by which gasoline deteriorates and gum forms may be obtained.

One of the conclusions which can be drawn from their work is that peroxides are the first products which are detectable when cracked gasoline deteriorates. They form at different rates in different gasolines, and in any one gasoline they build up with time at an increasing rate. As their concentration increases, other changes occur such as darkening in color, gum formation, loss in antiknock value and in susceptibility to inhibitors. Peroxides decrease the effectiveness of inhibitors, but unless present in high concentration do not prevent their action entirely.

The same authors studied peroxidation of gasoline in relation to its composition by removing certain groups of hydrocarbons and by a study of peroxidation of pure hydrocarbons. The properties of the gasolines were determined after removal of conjugated di-olefins and again after elimination of all olefin hydrocarbons. The oxidizability of the pure hydrocarbons was studied by testing the hydrocarbons singly, blended with one another, and blended with gasoline.

In connection with this work a Pennsylvania and a California gasoline, both untreated and treated, were analyzed employing the method of Faragher, Morrell and Levine.[1] The bromine numbers were determined according to the modification of the Francis method by adding the bromate solution at 0° as fast as taken up rather than all at one time. The analyses of the cracked gasolines are shown in Table 20.

TABLE 20—ANALYSES OF CRACKED GASOLINES FROM PENNSYLVANIA AND CALIFORNIA CRUDES

	Pennsylvania		California	
	Untreated	Treated	Untreated	Treated
Unsaturates, %	36.89	24.50	38.94	29.77
Aromatics, %	19.81	16.90	13.06	17.83
Bromine No.	64	43	61	54
Induction period, min.	65	120	445	(*)

*No break in 40 hours.

No relationship is apparent between the total unsaturated content of these gasolines and their tendency to oxidize as measured by induction period and formation of peroxides. The remarkable stability of the treated California gasoline in spite of its high content of olefins indicates that a large proportion of unsaturated hydrocarbons need not make a gasoline unstable. The properties of gasoline are apparently more dependent on the type of unsaturates present than on their amount. This accords with the findings of Flood, Hladky and Edgar[13] and Wagner and Hyman[19]. Conjugated di-olefins were removed from the gasoline by treatment with maleic anhydride, which has been shown to react quantitatively with conjugated di-olefins by Diels and Adler[7]. This reagent was used by Birch and Scott[11] in connection with their work, to which reference has already been made. The treatment did not stop the formation of copper dish gum, although in the California gasolines it greatly reduced it. The reverse of this procedure was tried by adding 2 per cent cyclopentadiene to gasoline which had been treated with maleic anhydride and

[1] Verh. d. Naturf. Ges. Basel, 1, 501.
[2] Verh. Natur. Ver. Karlsruhe, 13, 71 (1896); Ber., 30, 1,669 (1897).
[3] "Kritische Studien uber die Vorgange der Auto-oxidation," Brunswick, 1904.
[4] Chem. Rev. 10, 295 (1932).
[5] J. Inst. Pet. Tech., 15, 674 (1929).
[10] Ber., 33, 666 (1900).
[11] Loc. cit.
[12] J.I.E.C. 23, 1,132 (1931).
[13] J.I.E.C., 25, 1,234 (1933).
[14] Trans. Second World Power Conf., Berlin, 3, 33 (1934); Brennstoff-Chem., 11, 377 (1930).
[15] "Chemistry of Non-Benzenoid Hydrocarbons," Chemical Catalog, New York (1923).
[17] J.I.P.T. 13, 612 (1927).
[18] J.I.P.T. 15, 657 (1929).
[19] J.I.E.C. 21, 1,079 (1929).
[20] Loc. cit.
[21] Loc. cit.
[1] J.I.E.C. 23, 1,254 (1931).
[2] Bur. Mines Repts. Investigations, 2,394 (1922).
[3] Loc. cit.
[4] Loc. cit.
[5] Loc. cit.
[6] J.I.E.C. 18, 1,198 (1926).
[7] Loc. cit.
[8] Loc. cit.
[9] Loc. cit.
[1] Loc. cit.
[2] Loc. cit.
[3] "Motor Benzol: Its Production and Use," Natl. Benzole Assoc., London (1931).
[4] J.I.E.C. 26, No. 5, 497; No. 6, 655 (1934).
[5] Loc. cit.
[6] Loc. cit.
[7] Loc. cit.
[8] Loc. cit.

the induction period was decreased still further. Maleic anhydride treatment, after this addition, restored the induction period to its value where no di-olefin was added, although the tendency to absorb oxygen was not eliminated, which indicates that di-olefins are not the only hydrocarbons contributing to gasoline instability.

Olefins were removed with sulfur monochloride, in accordance with the procedure of Faragher, Morrell and Levine[2] to remove all unsaturated hydrocarbons. After this treatment the gasolines showed great resistance to oxidation; for example, they were exposed in a bomb for 44 hours at 100 pounds oxygen pressure per square inch at 100° C. without any break in the oxygen absorption curve and a slow drop in pressure.

Regarding the pure hydrocarbons it was found that oxidation of the paraffin hydrocarbons was very slight. Cyclohexane and the aromatic hydrocarbons tested were also difficult to oxidize. Benzene was unchanged, while toluene shows slight peroxidation, which is in accord with the known tendency of an aromatic side chain to be oxidized more easily than the nucleus.

The straight-chain olefins, by contrast, oxidized rapidly and formed gum. Cyclohexene was also extremely reactive, and indene and limonene were the most easily oxidized of the compounds tested. apparently under these vigorous oxidizing conditions indene goes to other oxidation products than gum, as very little is found in spite of rapid oxygen absorption. Limonene oxidizes readily, although it is not strictly a conjugated di-olefin. Possibly the ready oxidizability of cracked distillates is in part due to compounds having structures related to that of limonene.

Some additional conclusions from this work of Morrell, Dryer, Lowry and Egloff are as follows:

1. The tendency of cracked gasolines to react with oxygen and form peroxides is attributable in part to conjugated di-olefins and in part to other olefinic hydrocarbons. Removal of both produces a product extremely resistant to oxidation.

2. The tendency of olefins to form peroxides also differs widely among different members of the series, and with any given olefin is greatly influenced by concentration. A gasoline may contain a high concentration of olefins and yet be very resistant to oxidation. In regard to gum formation, these results confirm those of Flood, Hladky and Edgar.[1]

3. Di-olefins and olefins present together form more peroxidic compounds and more gum than when present singly in the same concentration.

4. Under the conditions employed, the oxidation of paraffins, cyclohexane and aromatic hydrocarbons is zero or negligible.

Dryer, Lowry, Morrell and Egloff[3] studied the rate of formation of peroxides, aldehydes, acids and gums in gasolines of several origins, some unrefined, some refined, and some of which contained inhibitors. The deterioration was also studied during storage over a period of a year, as well as in accelerated deterioration in the oxygen bomb.

Peroxide can be detected early in the storage period when no aldehyde or acid and practically no gum are present. The rate of peroxide formation accelerates with time. Aldehyde begins to appear somewhat later and increases more gradually than peroxide. Acid formation begins still later, and acid concentration increases more slowly than that of either aldehyde or peroxide.

Gum begins to appear in rather large amounts as soon as considerable peroxide has formed and before any large development of aldehyde or acid. The curve of gum content versus time is similar in shape to the peroxide curve, and the conclusions seem justifiable that gum formation is closely related to the concentration of peroxide and that aldehyde and acid are products of secondary reactions rather than intermediates in gum formation.

Smith and Cooke[5] made elementary analyses of gum and concluded that aldehydes formed by breakdown of peroxides were probably of more importance in gum formation than peroxides themselves. Wagner and Hyman[4] also analyzed gum

[2]Loc. cit.
[3]Loc. cit.
[5]J.I.E.C. 26, 855 (1934).
[1]Loc. cit.
[4]J.I.P.T. 15, 674 (1929).

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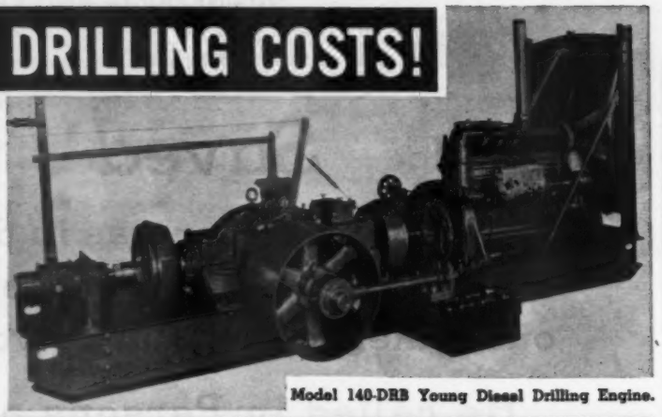

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and presented a mechanism of gum formation in which " peracids" from aldehydes were essential catalysts.

Story, Provine and Bennett[3] studied gum formed by evaporation in a copper dish, and concluded that it was largely composed of acids accompanied by unsaponifiable material resembling polymerized aldehydes, ketones or oxides.

Morrell, Dryer, Lowry and Egloff[4] made a further study of the formation of peroxides, aldehydes, acids and gums in typical cracked gasoline, particularly as to their distribution between the volatile portion of deteriorated gasoline, the gum dissolved in it, and the insoluble gum precipitated after severe oxidation. The elementary composition of the gum itself was also determined.

Their study shows that gum formed by evaporation of oxidized gasoline is high in peroxides, aldehydes and acids. Gum precipitated from gasoline during oxidation is quite different in composition from the dissolved gum, a pronounced characteristic being its higher content of acidic substances.

If the total amount of these oxidation products in fractions of oxidized gasoline are compared, the peroxides are usually found to be largely in the residue, the aldehydes fairly evenly distributed in all three cuts, and acids present in particularly large amount in the light fraction.

Study of gasoline being evaporated in gum tests showed that peroxide, aldehyde and acid are formed much faster in a copper than in a glass dish. Evaporation to dryness in the copper dish reduced or completely decomposed peroxides, leaving in the gum high concentrations of aldehyde and acid.

As to the mechanism of gum formation, these authors conclude that to contain large concentrations of peroxides, aldehydes and acids, it is not possible to say that any of these compounds are of no significance in the formation of gum. But the fact that peroxides are present in greatest amount, and that they concentrate in the gum to a much greater degree than do aldehydes and acid, support the earlier conclusion that peroxides are the substances primarily responsible for gum formation.

Use of Inhibitors

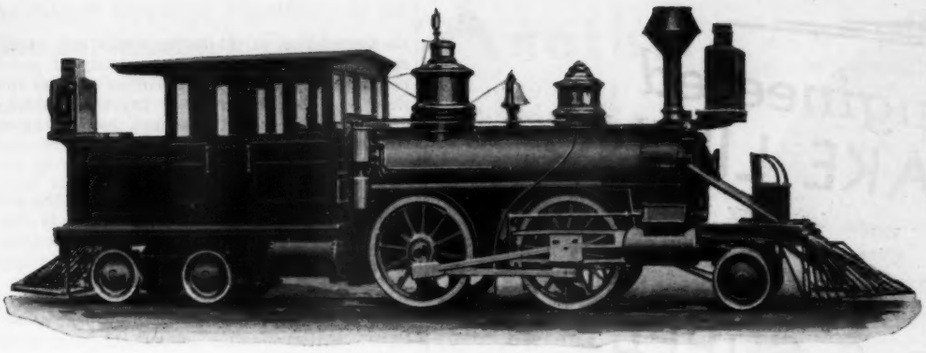
The use of inhibitors or antioxidants is so closely related to the formation of these peroxides, aldehydes, acids and gum that a statement regarding them is not amiss. The formation of gums with the simultaneous formation of peroxides, aldehydes and acids is undesirable in so far as cracked gasoline is concerned and may be looked upon as a deterioration process. Some cracked gasolines of high quality which are satisfactory for use when first produced deteriorate in storage so that they become dark in color, high in gum and lower in knock rating. Among the many factors which influence the rate of deterioration of stored gasoline, the most important is oxygen. Gasoline out of contact with oxygen or air changes but slowly.

A number of papers have been published on the application of inhibitors to cracked gasoline. Egloff, Faragher and Morrell[1] studied a number of compounds which protected gasoline, prevented color and increased in gum or arrested drop in knock-rating. Flood, Hladky and Edgar[4] showed the effect of an inhibitor on the rates of oxidation of pure hydrocarbons blended with gasoline. Mardles and Moss checked gum formation by the use of phenol and thymol. Wagner and Hyman reported gum inhibition by hydroquinone.

Rogers and Voorhees[5] have shown that a number of compounds increase the induction period of gasoline. They emphasized the amino-phenols and substituted amino-phenols. Rogers, Bussies and Ward[6] tested the effectiveness of some inhibitors in reducing gum formation in stored gasoline.

Egloff, Morrell, Lowry and Dryer[7] made a comprehensive study on the relationship of the structure of inhibitors to their inhibiting effectiveness. These same authors in a series of papers studied

[2]Loc. cit.
[3]A.C.S. Meeting, San Francisco, August 19-23, 1935.
[4]Am. Petr. Inst., Proc. 10th Ann. Meeting, 11, No. 1, Sec. III, 112 (1930).
[5]Paper presented before the Petroleum Division of the Eightieth Meeting of the American Chemical Society, Cincinnati, Ohio, Sept. 8-12, 1930.
[6]Paper presented before the Petroleum Division of the Eighty-fourth Meeting of the American Chemical Society, Denver Colo., Aug. 22-26, 1932.
[7]See 5.
[7]J.I.E.C., 24, 1,375 (1932).



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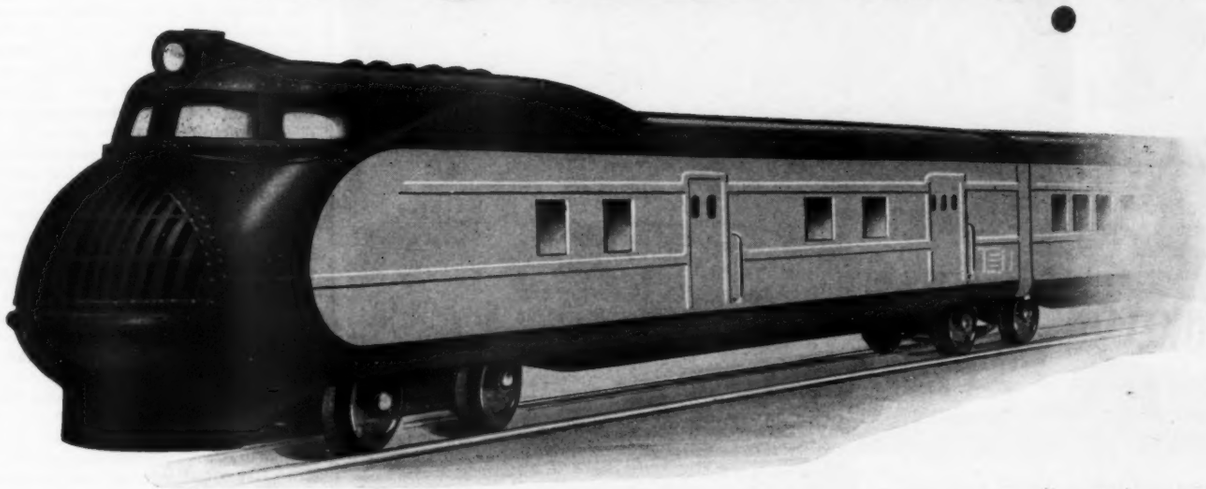

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the correlation of inhibiting action and oxidation reduction potential, storage stability of gasoline, peroxides in gasolines, mechanism of gum formation, and the formation of peroxides, aldehydes and acids in cracked gasolines, as well as other studies related to this general subject.

Color in Gasoline

Brooks and Parker[2] conclude that the yellow coloring matter in cracked distillates is due to the presence of hydrocarbons containing conjugated unsaturated groups or di-olefins of the conjugated type. This is indicated according to them by the ease of polymerizing these highly unsaturated yellow constituents by dilute acid, by heat alone, by fuller's earth, metallic sodium, etc., and by their rapid oxidation to form large proportions of gum. The coloring matter is not due to the presence of impurities containing oxygen and sulfur. The fulvenes are cited as examples of hydrocarbons containing conjugated double bonds which are definitely colored various shades of yellow, orange and red. As experimental proof that the yellow colors may be due to hydrocarbons only, they cracked a pure paraffin, protecting the distillate from oxidizing influences, and the distillate was found to be of a bright yellow color.

They indicate, however, that color of cracked distillates may also be due to the presence of phenols, which are readily oxidized, since cresols have been extracted from such distillates by preliminary alkali washing.

Brooks[3] stated that the most common cause of the discoloration of gasoline is a trace of acidity. Sulfur dioxide and sulfuric acid from its oxidation is the most common cause of this acidity. Oxidation of mercaptans and alkyl disulfide to sulfonic acids may also cause discoloration. Gasolines which have not been acid treated may also develop acidity and discoloration. According to Brooks, the function of steam in redistilling acid treated cracked gasolines is to take up the sulfur dioxide formed during distillation. Alkalis or oil-soluble bases prevent discoloration.

Egloff, Morrell, Benedict and Wirth[3] made a study of the effect of mercaptans, alkyl disulfides and sulfur on the color stability of gasolines when exposed to an arc light. They consider color stability as divided into two factors: (1) actual formation of color, and (2) development of a milky cloud or haze. The color stabilities of the gasolines were determined by exposing them to light from a carbon arc lamp under controlled conditions. The authors drew the following general conclusions from this work:

1. Mercaptans had no effect on the color stabilities of Mid-Continent gasolines and slightly decreased the stabilities of Pennsylvania cracked and blended gasolines. They caused color and haze formation in the Pennsylvania straightrun gasoline.

2. Alkyl disulfides (a) occurring naturally, (b) added as pure compounds, or (c) formed during sodium plumbite sweetening, caused color and/or haze formation in all gasolines upon light exposure.

3. Sulfur, added alone or in excess during plumbite sweetening, caused marked color and haze formation in the gasolines exposed to light.

4. The presence of both sulfur and disulfides in all the gasolines except Pennsylvania cracked gasoline had more deleterious effects upon color stability than when they were present separately.

5. Contacting sulfur and mercaptan-free gasolines with plumbite solution did not affect their color stabilities.

6. The haze formed upon exposure of the gasoline to light could be removed by passing through filter paper. Color improvements resulted in all cases. The straightrun gasolines showed very marked improvement returning to almost the original color upon removal of haze by filtration, showing that the apparent color of the unfiltered gasoline was mainly due to suspended particles. Filtration of cracked gasolines resulted in clarification with but slight improvement in color, showing that the color produced upon exposure was largely due to soluble colored compounds.

[2] J.I.E.C. 16, No. 6, 587 (1924).
[3] Loc. cit.
[3] J.I.E.C. 27, 323 (1935).

NOTE: To be continued next week.

Chemical Society Meeting Is of Special Interest to Refiners

The Petroleum Division of the American Chemical Society has prepared a program of unusual interest to refinery engineers and technologists for presentation at the April 12 to 17 meeting of the society at Kansas City. Between 2,000 and 2,200 members of the society are expected to register and judging from the programs of the Petroleum Division and the Gas and Fuel Chemistry Division substantial representation of the oil industry seems assured.

Division of Petroleum Chemistry

Tuesday—Joint Symposium on Motor Fuels with the Divisions of Gas and Fuel Chemistry and Industrial and Engineering Chemistry.

Wednesday—

9:00—V. N. Ipatieff and Herman Pines. Polymerization of Propylene under High Pressure and Temperature in the Presence and Absence of Phosphoric Acid.

9:30—V. N. Ipatieff and B. B. Corson. Gasoline from Ethylene by Catalytic Polymerization,

10:00—T. A. Mangelsdorf, B. L. Sowers and A. J. Deutser. The Measurement of Flow Rates of Hot Oil Streams by Dilution Method. Study of Naphthenic Acid for Use as Diluent.

10:30—Johannes H. Bruun. Laboratory Bubble-Cap Columns of Glass.

10:45—Mildred M. Hicks-Bruun and Johannes H. Bruun. The Freezing Point and Boiling Point of Propane.

11:00—Ralph W. Dornte and C. Vaughan Ferguson. Oil Oxidation. 1. The Reaction Which Is Unaffected by the Products.

11:30—W. B. Kay. The Density of Hydrocarbon Gases and Vapors at High Temperature and Pressure.

2:00—F. J. Smith and H. B. Sharp. Parallel Scale Rule for Vapor Pressure Data.

2:15—Harry T. Rall and Harold M. Smith. Physical Properties of Hydrocarbon Oils. 1. Behavior in Dilute Solutions of Organic Solvents. Benzene.

Harry T. Rall and Harold M. Smith. Physical Properties of Hydrocarbon Oils. 2. Relations between Molecular Weight and Concentration in Dilute Solution.

3:00—Bert H. Lincoln, Gordon D. Byrkit and Waldo L. Steiner. Chlorine Compounds in Lubricants. Chemical Constitution and Timken Film Strength.

3:30—H. G. Nevitt and L. C. Krchma. Viscosity-Temperature Susceptibility as an Index of the Effect of Temperature on the Consistency of Asphalt.

4:00—C. J. Boner. Factors Which Influence the Selection of Metallic Soaps for Thickening of Mineral Oils.

4:30—M. B. Penn and F. T. Gardner. Chlorinated Paraffin. 2. Products of Dechlorination.

Division of Gas and Fuel Chemistry

Tuesday—Symposium on Motor Fuels. George Granger Brown, presiding.

9:00—Gustav Egloff. Polymer Gasoline.

9:30—Gustav Egloff and J. C. Morrell. Alcohol Gasoline in Motor Fuel.

10:15—Leo M. Christensen. Alcohol-Gasoline Blends.

10:45—Oscar C. Bridgeman. The Utilization of Ethyl Alcohol-Gasoline Blends as Motor Fuels.

11:15—L. C. Lichty and E. J. Ziurys. The Performance of Engines with Gasoline and Alcohol as Fuels.

2:00—S. F. Birch and R. Stansfield. The Effect of Sulfur Compounds upon Lead Response.

2:30—Gerald M. Rassweiler and Lloyd Withrow. High-Speed Motion Pictures of Gasoline Engine Flames.

3:15—G. D. Boerlage and J. J. Broeze. Combustion Qualities of Diesel Fuel.

3:45—A. Ludlow Clayden. Propane, the Perfect Fuel.

4:00—M. M. Holm. Corrosion Test Methods in Use of Liquid Butane as Motor Fuel.

4:30—E. M. Barber and A. V. Ritchie. A Variable Vapor Volume Barometric Type of Vapor Pressure Apparatus.

Another talked-about drilling job

Gibson No. 1

Belridge Field, Calif.

Using All-Rubber Protectors On Upset Tool Joints

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THE CREW

The boys who are doing the drilling at Gibson No. 1. Left to right: Tool Pusher Mitchell, Driller Hutchins and Crew.

PROBLEMS FROM READERS

Edited by T. F. Smiley

Readers are invited to send questions relating to drilling, producing and transporting operations. These questions will be referred to persons capable of answering authoritatively. The names of those writing for information will be held confidential, initials only being published. This department cannot undertake to answer questions involving royalty or other investments, patents or intricate formulas or questions which should be submitted to consulting engineers, geologists or lawyers.

Submergence or Working Pressure in Operation of Air- or Gas-Lift

I have become interested in the air- or gas-lift, and the term "submergence" is used a good deal. There is nothing in the articles I have read that make the meaning of this term clear as it is used in this connection, and I would appreciate it if you would explain just what it means. In at least one place I have come across the word it seems to allude to working pressure.—E. N. D.

Submergence or working pressure refers, in discussion of the air- or gas-lift, to the depth of submersion of the point of outlet of the compressed agent input pipe below the fluid level of a well. S. F. Shaw, discussing "Principles of the Air-Gas Lift," says on this subject:

"The fluid level in an oil well or water well is that point to which the liquid will rise under existing conditions. If there be no discharge of the liquid from the well, the liquid will assume a static condition. If the liquid is being pumped, whether by plunger pump or air-lift, the level of the liquid will be lowered, depending upon the rate at which the liquid will enter the well when the well is being pumped at any given rate.

"The term 'submergence' has been employed for many years by those versed in air-lifts to denote the height of the liquid above the point at which the air is admitted at the lower end of the air tubing. When starting a well on the air-lift the submergence is usually higher than when the well is being pumped. This is termed 'starting submergence.' When the well has reached a stationary condition it is called 'working submergence.' Submergence may be expressed in feet of water, feet of oil, or in pressure in pounds per square inch. Before calculations for air-lifts can be made it is necessary to determine the lift, that is, the height to which the liquid must be raised, and, in order to do this it is necessary to ascertain the submergence in feet, since the total vertical length of the air pipe minus the submergence is the lift.

"There are three general types of air-lift installations: (1) Two pipes, side by side, connected near the lower end, the air flowing through one of the pipes to the connection, and the mixed air and liquid rising through the other pipe. (2) Two pipes, one inserted in the other and the air flowing through the inner pipe to the lower end, the mixture of air and liquid rising in the annular space between the two pipes. This is called the 'central air-lift system.' (3) Two pipes, one inserted in the other, the air passing through the annular space between the two pipes, the mixture of air and liquid rising in the inside pipe. This is called the 'Saunders system.'

"In the first type a liquid level is maintained which can be measured. In the second and third types the liquid column is in motion in both pipes and submergence cannot be actually measured, but the level to which the liquid would rise at the instant the air is cut off from the air pipe can be determined by noting the gauge pressure at the top of the well and subtracting from this the friction loss due to the air flowing through the air pipe, thus obtaining the pressure at the bottom of the air pipe. The feet of corresponding submergence can then be determined from this figure of pressure, making allowance for the specific gravity of the particular liquid being lifted.

"Oil wells which have ceased to flow present an exact parallel to water wells as regards submergence. One may be somewhat puzzled as to the manner of handling submergence in flowing wells, but a little study in air-lift practice will reveal the fact that the theoretical submergence presents exactly the same problem as is found in a water well. Submergence and lift can be calculated from the pressure obtaining at the lower end of the flowing column.

"A water well would show a condition of ebullition if insufficient air were admitted to cause it to flow. The level would be found higher than the level that would obtain if the column were not made lighter by the air passing through it. This does not change the consideration of submergence, however, as the water column is considered as if it had a specific gravity of 1, and not the accidental specific gravity due to variable quantities of air slipping through it. An oil well should be considered in the same manner; that is, the submergence is that which would be measured if there were no gas mixed with it and slipping through it. For a given pressure the submergence of most oils is greater than that of water, owing to the lower specific gravity of the oil."

WHY THEY CALLED IT *Thumb*

It is pretty safe to say it was a country-bred man who first applied the name "Thumb" to that area of Michigan which extends in detached, offish fashion from the eastern edge of the state into Lake Huron. It hardly would have come to the mind of one who had passed through the gloved boyhood of a city. It must have been somebody who saw in the map of Michigan a likeness to the homely but warmly comfortable mitten which mother used to knit. And that projection northeast of a line drawn from Bay City to Port Huron was the thumb. Today the petroleum geologist regularly calls it that. Even so official and scientific a body as the Michigan Geological Survey uses the designation throughout its book on "Oil and Gas Fields of Michigan."

Stripper Well May Have Bigger and More Profitable Place in Future

I have a rather direct interest in several stripper wells, as they are called. I have not paid much attention to them, since they have not seemed to mean much in the way of money-making possibilities. I have been observing the course of the gasoline market, however, and reports seem to indicate we are approaching an end of the demoralizing overproduction of both crude oil and gasoline. This makes me wonder whether there may not be a bigger and more profitable place for the stripper well in the future. I should be glad to have you tell me something about the outlook. Are there any laws or regulations designed to prevent the use of water-flooding in Oklahoma or that would interfere in any way with that method of recovering oil remaining in the sand?—T. T. R.

There is increasing reason for believing the stripper well will occupy an increasingly important place in the future. Gasoline consumption in 1936 is expected to exceed all previous records and there is every evidence the future demands for motor fuel will increase. The oil industry therefore faces the job of finding enough raw material annually to produce some 375,000,000 bbls. of motor fuel. From 1931 to 1934 the yearly consumption of crude was 870,000,000 bbls. while new discoveries in the same period averaged 580,000,000 bbls. yearly. Consumption was roughly 50 per cent ahead of new discoveries, and an adequate supply of gasoline resulted largely from the fact that big fields were opened in the five years immediately preceding 1931. In the last year the opening of new fields has narrowed the distance between demand and visible potential supply, but it has not changed the situation fundamentally.

Commenting on the larger place which the stripper well is likely to assume as a result of the situation which seems to be developing, Dr. W. H. Voskuil, of the Illinois State Geological Survey, wrote recently:

"The stripper well areas of the oil-producing states offer possibilities of augmenting the sources of motor fuel supply that have not been fully utilized. The importance of the stripper fields cannot be judged entirely from their annual contribution to the crude oil supply; the duration of production from the stripper well areas as compared with the spectacular but sometimes short-lived flush pools is also a factor to be noted. Finally, the decreasing rate at which flush pools are being discovered and brought into production will gradually bring about a lower percentage of the annual supply from this type of pool and increase proportionally the supply from smaller pools.

"The hope of greater ultimate recovery in the stripper well districts, whether they be located in Illinois, Pennsylvania, Kansas or elsewhere, lies in increasing the flow by improved recovery methods. But there can be no incentive for investment in improved recovery methods unless two conditions are met: (1) Investment in these methods must reduce the per barrel lifting cost, or conversely, must yield an additional quantity of oil which is greater in value than these added investment costs. (2) The benefits of increased recovery must not be nullified by artificially imposed restrictions. In addition to the normal handicaps of higher production costs, the stripper wells have passed through a period of severe price drops occasioned by the sudden appearance of several large fields and intensified by the general fall in price levels since 1929."

For information regarding any regulations concerning the use of water-flooding in Oklahoma you are advised to address an inquiry to the Oklahoma Corporation Commission, Oklahoma City.

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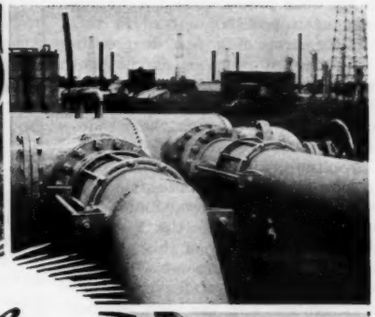

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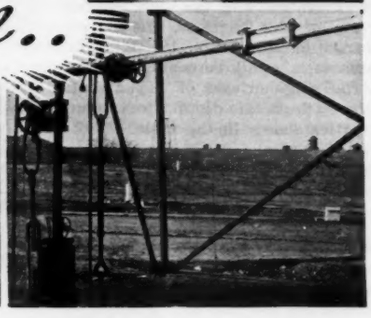

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5. ***Tank-battery lines,*** including (a) low lines on top of tank batteries, (b) bleeder lines from tanks, and (c) manifolds.

6. ***Field-gathering lines*** from field-storage tank batteries to field pumping-stations.

7. ***Field-pumping-station lines*** to main-line station.

8. ***Transmission or main lines*** to refineries and loading terminals.

9. ***Miscellaneous uses*** in refineries and at loading terminals.

10. ***Gasoline lines*** from refineries, including miscellaneous uses on tanks, pumping stations, and storage terminals.

11. ***Vacuum lines*** transporting gas from wells to gasoline plants.

12. ***Miscellaneous uses*** in gasoline plants and at loading racks.

13. ***Gas lines*** from wells and gasoline plants to booster stations and on to main-line compressor station lines.

14. ***Gas lines*** from compressor stations to domestic and industrial distribution systems.

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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit problems to Dr. C. K. Francis. Questions should give as much detail as possible. Inquiries must be signed but only the given initials will be printed. The source of questions is considered confidential. Questions requiring discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered in these columns.

Palembang Petroleum of Sumatra Has Interesting Composition

Where is Palembang crude oil produced? How does it differ from our U. S. paraffin base oils? How do the low fractions consisting mostly of wax differ in tests, etc., from similar fractions from our crude oils?—A. O. V.

Palembang crude oil is produced near the city of that name in Burma. There are certain characteristics that distinguish this oil. The oil is described in the literature as indicated in the references following. The producing properties of the Koloniale are located in the Talang Akar concession, a distance of 130 kilometers, or about 80 miles from Palembang[1].

The oil which has been produced on the Talang Akar concession is of a peculiar nature in this respect, that with the drop of a few degrees in temperature it solidifies to such an extent that it cannot be pumped any distance. When the thermometer drops from 80° to 75°, the oil thickens so that it cannot be handled through the pumps.

Talang Akar crude averages about 36° A.P.I., and has a high gasoline content[2]. In addition to a high paraffin content, the crude contains a substantial proportion of unsaturated compounds. The latter appear most prominently in the kerosene fractions, necessitating the refining of this product by the Edeleanu sulfur dioxide process. The outstanding difference from other crudes is the 10 to 15 per cent wax content and the high melting point of certain of the wax fractions. The overall melting point range is 100° F. to 185° F. The asphaltic residuum is a small percentage of the crude, being in the neighborhood of 3 per cent.

A sample of the oil from this district was found to have the properties shown in the table.

SUMATRA OIL PALEMBANG DISTRICT

Gravity °A.P.I.	27.8
Pour °F.	80
Viscosity Saybolt at 77° F.	184
Viscosity Saybolt at 100° F.	42
Viscosity Saybolt at 210° F.	31
Sulfur, per cent	0.13

Products by Distillation

		Per cent
Gasoline		26.9
Gravity A.P.I.	61.7	
Octane No.	66.5	
Initial	104	
Maximum	323	
Kerosene		25.3
Gravity A.P.I.	38.7	
Flash °F.	146	
Thermo viscosity	430	
Initial	370	
Maximum	529	
Gas oil		3.3
Gravity	36.5	
Flash °F.	240	
Pour °F.	35	
Viscosity at 100° F.	38	
Paraffin Dist.		27.6
Gravity	31.9	
Flash °F.	360	
Pour °F.	105	
Viscosity at 130° F.	58	
Viscosity at 210° F.	36	
Initial	620	
90 per cent	851	
Bottoms		15.8
Gravity	15.5	
Melting Point °F.	147	

The crude oil from the southern part of Sumatra, according to Das Erdol[3], is even richer in gasoline than that of the northern part of the island. It usually contains one-third or more of gasoline and from one-third to two-thirds of kerosene and only a little residuum. In the work of Engler and his students, up to 60 per cent of gasoline, 30-40 per cent of kerosene, and 5-10 per cent of residuum were found.

According to the investigations of several chemists, the Sumatra oils consist of hydrocarbons of the paraffin series and also contain naphthenes and considerable aromatic hydrocarbons. The following have been isolated: Pentane, n-hexane, sec.-hexane, n-heptane, sec.-heptane, n-octane, sec.-octane, nonane, benzene, toluene, mesitylene, pseudocumene, methylpentamethylene, and cyclohexane. As to the elementary composition of the Sumatra petroleums there is an analysis by Engler and Jezioranski and Engler and Michel, for which the exact place of origin is not specified:

PETROLEUM OF SUMATRA

	Crude oil	Fractions to 150°	150-200°	Over 200°
Carbon, per cent	85.78	85.00	86.04	87.20
Hydrogen, per cent.	14.22	15.00	13.96	12.80

[1]Building a Refinery in the Jungle, The Oil and Gas Journal, December 20, 1926, page 126.
[2]Sumatra Has Modern Refinery, World Petroleum, October 1934, page 374.
[3]Das Erdol, Engler and Hofer, Vol. I, page 642 (1913).

Dilution of Gear Grease With Kerosene Not Always Hazardous

Is the addition of kerosene to gear greases for dilution purposes as harmful as we are led to believe?—E. F. G.

The dilution of a gear grease with kerosene is usually for the purpose of providing a mixture that will flow easier than some grease that is available. In a similar manner lubricating oils are diluted with kerosene to reduce the viscosity or to make a lubricant that will flow at a lower temperature than the undiluted oil. It is advisable that mixtures of this character be made under expert supervision. Sometimes such blends must be prepared in the field, to serve as an emergency, the proportions being determined by trial.

There is no unusual hazard to be considered when preparing mixtures of grease and kerosene. The kerosene should be of good quality so that excessive quantities of corrosive sulfur will not be introduced, as may happen should an inferior oil be used.

It is important that any mixture having a low flashpoint should not be used where there may be possible hazards of fire and explosion.

The gears on a motor driven, direct connected pump should not be lubricated with a grease containing kerosene that will flash under the temperatures existing about the motor. This precaution should be very closely observed when a mixture of this character is used within a building. Where the grease is used away from a fire or where there is no chance for a spark, there can be no danger.

Gas Required to Replace Fuel Oil and Pipe Capacities

We are figuring on natural gas firing our boilers in place of oil but would have to build a line 3 miles long. These boilers have required 2.5 bbls. of fuel oil per hour, the maximum being 4 bbls. per hour. We do not know the pressures at which the gas will be delivered. Will you kindly tell me how to figure out the capacity and size of pipe required?—F. E. E.

There are numerous conditions that must be known when calculating fuel equivalent values. Among the many variables is the very important one of furnace size and design, for it cannot be expected that a furnace designed for burning coal or oil will be efficient when the fuel is changed to natural gas. A furnace designed for steam boilers from which most of our combustion data have been obtained, should not produce the same results as the furnace for stills. Essential data are the heating value of both fuels. Since they are not available, it is necessary to consider the problem in a very general way.

When estimating the heating value of fuel oil a gravity of 20° A.P.I. may be assumed, which should have a heating value of 19,000 B.t.u. per pound or 6,218,394 B.t.u. per barrel. Good natural gas has a B.t.u. value of 1,000 per cubic foot, therefore 6,218 cubic feet will replace 1 bbl. of oil. Usually natural gas is burned without so much loss as when burning oil. If the required quantity of oil per hour is 2.5 to 4 bbls. then the same quantity of heat would be produced from 15,545 and 24,872 cubic feet of natural gas, or a maximum of about 597,000 cubic feet each 24 hours. Either a 2-inch or 3-inch line should deliver the required volume of gas, the quantity depending on the pressure.

A selection from the gas tables will serve to illustrate how the quantities of gas vary with the pressure and size of pipe.

CAPACITIES OF GAS LINES THREE MILES LONG

Up stream pressure (lbs.)	Capacity per 24 hours (cubic feet) Diam. of pipe, inches 2	3
40	177,000	508,000
80	322,000	923,000
100	393,000	1,130,000
200	744,000	2,130,000
300	1,090,000	3,140,000
400	1,440,000	4,140,000

These capacities are, from the tables by Diehl, based on a downstream pressure of 5 pounds gauge, a base flowing temperature of 60° F., and a specific gravity of 0.60.

Complete tables and other details are to be found in the reference mentioned.

Reference: Diehl, Natural Gas Handbook.

High Melting Point Amorphous Wax Now Obtainable

Will you kindly tell us what are the accepted specifications for high melting point amorphous wax? Is this obtainable in a condition free from oil?—S. A. U.

Amorphous paraffin wax is now obtainable having the properties indicated in the table.

AMORPHOUS PARAFFIN WAX

Melting point, deg. F.	160-165
Color	white, amber or black
Saponification number, about	1.00
Acid number, about	0.01
Oil and moisture	practically nil

This product is tough and pliable and does not crack or fracture.

Amorphous wax is shipped in the form of a slab each weighing about 1¼ pounds. The slabs measure 1½"x11¾"x18½". These are packed in cartons each holding eight slabs, making the total weight 82 to 85 pounds gross.

Kansas Developments

By
DAL DALRYMPLE

RENO COUNTY WELL FLOWED 5,570 BARRELS IN 24 HOURS

Oil activity throughout Kansas has revived with the coming of spring weather, and drillers are speeding ahead to regain time lost during the past winter. Not only are the wildcatters extremely active, constantly extending their search for hidden oil reserves into unexplored sections of the state, but the revival of operations is noticeable in proven areas, where extensions of pools are common occurrences. The weather has been favorable to drilling, the market demand is increasing, and the recent announcement of T. A. Morgan, director of conservation for the Kansas Corporation Commission, that the state's allowable production would be 146,000 bbls. of oil daily in April is an added incentive for increasing operations. The new allowable will be a 4,000-bbl. increase over the March allowable.

The probable linking of the Baird and Martin fields in western Cowley County is indicated by the Shawver & Wilt No. 1 Baruth, SW NW NE section 8-34-3, which was variously estimated as flowing between 300 and 600 bbls. of oil daily from Bartlesville sand. Location is 4 miles northwest of Arkansas City, between the two neighboring pools and in an area in which Bartlesville sand production has been increasing. The wildcat topped Bartlesville sand at 3,281 feet, total depth 3,303 feet.

A new pool in northeast Stafford County is being opened with L. A. Farris and associates No. 1 Snyder, SE SE NW section 3-21-11w. It was bottomed at 3,106 feet in Lansing lime, and before being shut in for repairs to rig it produced an estimated 5,000,000 feet of gas and from 100 to 150 bbls. of oil a day. Location is south of the Ellingwood and Silica areas in Barton County; southwest of the Raymond pool in Rice County, and northeast of the Richardson pool in Stafford County.

An interesting new wildcat test due for an early start is the Continental Oil Co. No. 1 Thompson, C E half E half SW section 13-18-26w, a location in Ness County. It is 18 miles west of Ness City and 2 miles southwest of the lone producer in the Aldrich pool, completed several years ago but shut in because of lack of pipe line outlet.

Shell Petroleum Corp. No. 1 Reece, CWL SW section 11-26-9w, discovery well in the Lerado pool of southwestern Reno County, was completed last Saturday, flowing 5,570 bbls. of oil in 24 hours on potential test. The crew had been fishing for a lost bailer since the well was drilled into the pay two months ago. Production is from Viola lime, at total depth of 4,156 feet. The Shell company has two other producers in the area.

C. E. Skiles and others No. 1 Edwards, NW NW NE section 3-18-8w, wildcat west of Geneseo in northern Rice County, made a potential of 550 bbls. of oil and was completed. Top of Siliceous lime was 3,278 feet; total depth, 3,282 feet.

In the Silica area, Gulf Oil Corp. No. 6 Steckel, NW cor. section 31-19-10w, had Siliceous lime at 3,282-3,303 feet and pumped 864 bbls. of oil in 14 hours. On completion test it made potential of 1,449 bbls. In the Keesling area, same operator's No. 3 Dick, NW NE SW section 15-20-9w, made potential of 1,496 bbls. of oil and was completed. It had Siliceous lime at 3,221-43 feet, total depth.

Lario Oil & Gas Co. No. 4 Foote, SE SW NE section 7-20-9w, in the Chase area, made potential of 1,116 bbls. of oil in 21 hours after acidizing and was completed. It topped Siliceous lime at 3,252 feet; total depth, 3,280 feet. Slick, Pryor & Lockhart No. 2 Mezger, NW NE NE section 21-20-10w, in the Raymond district, topped Siliceous lime at 3,351 feet; total depth, 3,354 feet; made potential of 849 bbls. of oil and was completed. Same operators No. 2 Moran, NW SW NW section 4-18-10w, in the Stumps pool, made potential of 746 bbls. of oil after encountering Siliceous lime at 3,246-71 feet, total depth, and was completed. In the Ploog area, Shell Petroleum Corp. and others No. 2 Haxton "A," C S half S half NW section 33-18-9w, produced 65 bbls. of oil and 16 bbls. of water on potential test and was completed. Siliceous lime was topped at 3,230 feet; total depth, 3,273 feet; but it was plugged back to 3,263 feet to complete.

New work in Rice County included Empire Oil & Refining Co. No. 1 Burns, SW NW SW section 15-20-10w, rotary rig; R. E. Day and others No. 1 Mansz, SW SE SE section 21-21-7w, a location.

Hutchinson Oil Co. No. 2 Wendell, NE SW NE section 32-19-10w, topped Siliceous lime at 3,300 feet; pay at 3,325 feet; total depth, 3,330 feet; was acidized and made potential of 1,400 bbls. of oil, but had not been completed. Skelly Oil Co. No. 3 Graham, NE SE SE section 16-20-10w, pumped 880 bbls. of oil in 17 hours after acidizing, but had not been completed. Siliceous lime was topped at 3,355 feet; total depth, 3,358 feet.

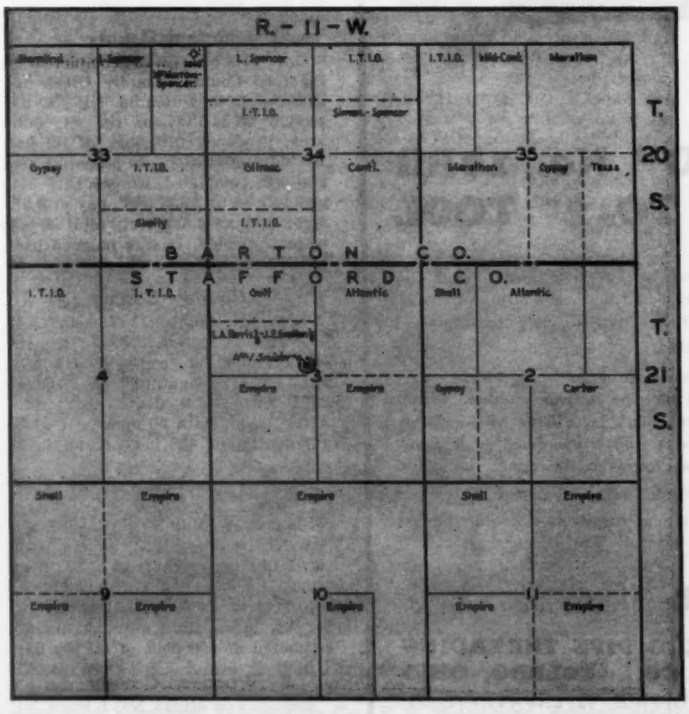
Barton County

In the Barton County sector of the Silica area, Magnolia Petroleum Co. No. 1 Steckel, NE NE NW section 1-20-11w, topped Siliceous lime at 3,283 feet; was bottomed at 3,292 feet; made 24-hour potential of 1,215 bbls. of oil and was completed. Gulf Oil Corp. No. 3 Wendel, C E half SE NE section 36-19-11w, was acidized, pumped 687 bbls. of oil in 14 hours, made potential of 1,074 bbls. and was completed. It topped Siliceous lime at 3,282 feet; total depth, 3,303 feet. Texas Co. No. 1 Ziegenbusch, NE cor. section 23-19-11w, made potential of 188 bbls. of oil after acidizing and was completed. Top of Siliceous lime was 3,309 feet; total depth, 3,357 feet. C. B. Davis and Gulf Oil Corp. No. 3 Steckel, NW NE SE section 1-20-11w, was dry and abandoned at 3,324 feet, total depth. Siliceous lime was topped at 3,319 feet.

A Barton County wildcat failed to find commercial production and was dry and abandoned. It was the Morgan & Flynn and others No. 1 Amerine, NE cor. section 14-19-14w, northwest of Great Bend. Top of Siliceous lime was 3,550 feet. It had a hole full of water at 3,634-42 feet, and was bottomed at 3,668 feet.

New work in Barton County was as follows: Davison and others No. 1 Birzer, SW SE SW section 22-17-12w, wildcat north of Redwing, was a cellar; Schermerhorn Oil Co. No. 1 Hunter, NE cor. section 29-18-15w, wildcat northeast of the Albert area, was a location; Derby Oil Co. No. 1 Roth, SW SW NE section 25-19-11w, location; Gulf Oil Corp. No. 4 Wendel, SE NE NE section 36-19-11w, rigging up rotary; same operator's No. 5 Wendel, SW NE NE section 36-19-11w, building rig.

Continental Oil Co. No. 4 Risse, SW SE SE section 36-19-11w, topped Siliceous lime at 3,278 feet; total depth, 3,290 feet, and was swabbing at the rate of 40 bbls. of oil per hour.



Farris and others wildcat in NW section 3-21-11w is showing as a pool opener in northeastern Stafford County, south of the Silica area
(Mid-Continent Map Co., Wichita, Kans.)

Estimated Production

Estimated daily average production in Kansas for the week ending March 21 and for the preceding week is as follows:

	Barrels	
	Mar. 21	Mar. 14
Oxford City	7,300	7,100
Burrton	14,850	14,700
Ritz-Canton	7,825	7,100
Hollow-Nikkel	4,475	4,100
Voshell	3,925	3,900
Ellsworth County:		
Lorraine-So. Lorraine	8,709	7,403
Other pools	1,447	1,648
Rice-Barton Counties:		
Chase	10,787	9,020
Raymond	3,140	2,158
Silica	6,812	6,199
Keesling	1,943	1,305
Miscellaneous Rice	2,882	2,680
Miscellaneous Barton	1,808	1,235
Russell County:		
Fairport	2,795	2,675
Gorham	4,312	3,479
Russell	2,740	2,685
Other pools	7,611	7,338
Sedgwick County:		
Valley Center	1,369	1,387
Greenwich	1,357	1,342
Robbins	1,783	1,771
Eastborough	896	916
Other pools	645	582
Ellis County	554	436
Kingman County	557	550
Stafford County	2,900	1,843
Greenwood County	9,400	9,500
Butler County	18,300	18,210
Other fields	19,653	19,788
Total Kansas	150,975	141,150

Russell County

Each of four Russell County completions made potentials in excess of 1,000 bbls. of oil daily. Gulf Oil Corp. No. 2 Ehrlich, SE SW NW section 1-14-15w, topped Oswald lime at 3,044

feet and was bottomed at 3,079 feet. After acidizing, it made potential of 1,567 bbls. Empire Oil & Refining Co. No. 2 Crawford, SW cor. section 2-14-15w, made potential of 1,463 bbls. Gorham sand was topped at 3,292 feet; total depth, 3,293 feet. Darby Petroleum Corp. No. 1 Dumler, NW cor. section 11-14-15w, in the Sullivan area, had Gorham sand at 3,289-91 feet, total depth, and on completion test made a potential of 1,142 bbls. J. C. Shaffer, Inc., No. 2 Polcyn, NW NE NE section 10-14-15w, had Gorham sand at 3,282 feet; total depth, 3,284 feet. On potential test it produced 1,008 bbls. of oil and 189 bbls. of water.

New work in Russell County was as follows: Billings No. 2 Witt, NE SE SW section 3-14-15w, cellar; Darby Petroleum Corp. No. 2 Dumler, NE NW NW section 11-14-15w, location; same operator's No. 3 Dumler, SW NW NW section 11-14-15w, location; Hartman & Blair No. 2 Harbauh, SE SE SW section 25-14-15w, cellar; Southern Oil Co. No. 1 Sellens, SW cor. section 29-15-13w, building rig; same operators' No. 1 Shaffer, NE cor. section 31-15-13w, location; Coralena Oil Co. No. 1 Boomhower, NW cor. section 32-15-13w, location; Beardmore and others No. 2 Karst, SW SW NE section 27-15-14w, rig; Darby Petroleum Corp. No. 2 Steinert, SE SW SW section 25-15-15w, location.

Hartman & Blair and others' No. 1 Boxberger, NW NW SW section 32-13-14w, wildcat southwest of Russell, was showing as a new pool opener. Top of Oswald lime was 3,039 feet. Total depth was 3,220 feet. In the first 24 hours after cementing 6-inch casing at 3,150 feet, it pumped 202 bbls. of oil; 96 bbls. in the second 24 hours; and 120 bbls. of oil, with 4 per cent water, in the third 24 hours. Texas Co. No. 3 Anschutz, SW NW SW section 1-14-15w, topped Oswald lime at 3,050 feet; had pay at 3,090-99 feet, total depth, and swabbed 60 bbls. of oil in 11 hours. Derby Oil Co. No. 1 Karst, SW NW NE section 27-15-14w, topped Oswald lime at 3,087 feet; had pay at 3,121-23 feet, and pumped 75 bbls. of oil and an estimated 100 bbls. of water in 24 hours.

Reno County

It was a dull week in Reno County. No wells were completed and only one new test starting, Sinclair Prairie Oil Co. had cellar dug for No. 1 Baker, C SW NE section 10-24-4w.

Ellsworth County

Two good producers and one failure were Ellsworth County's contribution to the week's record. Carter Oil Co. and others No. 2 Ogden, C N half N half SW section 26-17-9w, in the South Lorraine area, produced 1,431 bbls. of oil in 24 hours and was completed. After encountering Siliceous lime at 3,167-70 feet, total depth, it pumped 960 bbls. in 16 hours. Phillips Petroleum Co. No. 6 Melchert, SW SE NE section 23-17-9w, in the Lorraine area, made a 24-hour production of 1,317 bbls. after acidizing and was completed. Siliceous lime was topped at 3,201 feet; total depth, 3,210 feet. It made potential of 363 bbls. in 24 hours before acid treatment. Smith & Ash and the Phillips Petroleum Co. had a failure in their No. 1 Splitter, SW cor. section 19-17-9w, wildcat, which had a hole full of water at 3,330 feet, total depth, and was dry and abandoned. Siliceous lime was topped at 3,305 feet.

McPherson County

Continental Oil Co. and others No. 1 Hetzke, SW SW NE section 29-21-1w, in the Showalter area, made potential of 1,450 bbls. of oil and was completed at 3,308 feet, total depth. Hunton lime was topped at 3,284 feet.

Harvey County

Imo Oil & Gas Co. No. 2 Ewy, NW cor. section 24-22-2w, in the Sperling area of Harvey County, produced 6,000,000 feet of gas daily and was completed at 2,980 feet, total depth. Chat was topped at 2,935 feet. Magnolia Petroleum Co. No. 5 Schmidt, SE NW NE section 30-22-3w, was deepened without results and was dry and abandoned at 3,612 feet, total depth. Old total depth was 3,549 feet. Wilcox sand was topped at 3,578 feet and carried a hole full of water. Siliceous lime was found at 3,611 feet. No new work was started.

Stafford County

One producer was completed in Stafford County. Empire Oil & Refining Co. No. 1 Benton, NE NE SW section 23-24-13w, in the St. John area, produced 270 bbls. of oil and 10 bbls. of water on potential test and was completed. Kansas City lime was topped at 3,535 feet; pay at 3,575 feet; and at 3,632 feet, total depth, water intruded. It was plugged back to 3,620 feet and acidized.

Cowley County

Trees Oil Co. No. 1 Littell, C W half E half section 19-30-4, was the only completion in Cowley County. Sand was encountered at 2,859 to 2,877 feet; total depth, 2,881 feet. After a shot with 50 quarts, it made a potential of 438 bbls. of oil in 24 hours.

No new work was started in Cowley County.

Shawver & Wilt No. 1 Baruth, SW NW NE section 8-34-3, an old wildcat being deepened from 1,893 feet, topped sand at 3,281 feet and was bottomed at 3,303 feet. It was flowing by heads, and production was estimated at 400 bbls. of oil per day.

Woodson County

Braden and others No. 1 Sage, NE NE SE section 36-23-13, had Mississippi lime at 1,709-59 feet and was dry and abandoned. It was the only Woodson County completion, and no new work was started in the county.

Butler County

El Dorado Refining Co. and Skelly Oil Co. No. 1 Gilson, SE SE NE section 10-28-6, in the Kramer area, was the only completion in Butler County. Viola lime was encountered at 3,001 to 3,012 feet; pay at 3,028-31 feet, total depth. After acidizing, it made 24-hour potential of 414 bbls. of oil, and produced 90 bbls. of water. No new Butler County work was started.

Pryor & Lockhart and others No. 2 Gunther, NW SE NW section 29-26-7, had pay at 2,788-96 feet, total depth. After acidizing, it pumped 25 bbls. of oil and 50 bbls. of water in 12 hours.

Sumner County

Shell Petroleum Corp. No. 6 Community, NE NW NE section 14-32-2, in the Oxford area of Sumner County, was deepened from old total depth of 2,115 feet to 3,037 feet. Shooting failed to make a big producer and it was plugged back to 2,988 feet and acidized. It then made a 24-hour production of 1,045 bbls. of oil. Simpson Dolomite was topped at 2,887 feet. Same operator's No. 2 Fritz, NE NW NE section 14-32-2, deepened from 2,116 feet, topped Dolomite at 2,869 feet, drilled to 3,007 feet, plugged back to 2,978 feet and was acidized. It made 24-hour potential of 634 bbls. of oil and was completed. T. M. Deal Oil & Gas Co. No. 1 Peter, NW NW SE section 23-32-2, was dry and abandoned at 3,546 feet, total depth. Dolomite was topped at 3,514 feet and water was encountered at 3,530 feet.

Sinclair Prairie Oil Co. No. 6 Kamis, SE SE SW section 28-31-1w, was the only completion in the Wellington area. Top of Chat was 3,625 feet; total depth, 3,668 feet. After acid treatment, it made potential of 295 bbls. of oil.

New work in Sumner County: Shell Petroleum Corp. No. 3 Scroggins "A," SE SE NW section 14-32-2, rigging up to drill deeper from old total depth of 2,071 feet; same operator's No. 4 Mason, SW SE NW section 25-31-2, rigging up to deepen from 1,900 feet; Sinclair Prairie Oil Co. No. 7 Kamis, NE SE SW section 28-31-1w, location.

Chase County

Mullins and others No. 1-A Leedy, SE NE SE section 26-22-9, in the Teeter area of Chase County, was completed at 2,415 feet, total depth. Sand was topped at 2,382 feet. It was shot with 100 quarts and production was estimated at 100 bbls. of oil daily.

Ness County

Location was staked for a new wildcat in Ness County, Continental Oil Co. No. 1 Thompson, C E half E half SW section 13-18-26w, in the western part of the county.

Trego County

R. B. McNeely and others have rotary rig up for No. 1 John Lemke, NW NW SW section 7-11-22w, a new wildcat location in Trego County.

Greenwood County

W. M. Moore Oil & Gas Co. No. 4 Pixley, NE NE SE section 7-22-10, in Greenwood County, swabbed 200 bbls. of oil in 24 hours after a shot and was completed. Sand was topped at 2,294 feet; total depth, 2,338 feet.

Landon & Parrish No. 1-A Johnson, NE NE SE section 16-24-12, had Mississippi lime at 1,704-25 feet, total depth; was acidized, pumped 100 bbls.

(Continued on Page 92)

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Among Gulf Coast Drilling Contractors

Rutherford Drilling Co. extended the producing limits of the Bay City field, Matagorda County, by the completion of two wells for Skelly Oil Co.. No. 5-B Cobb flowed 826 bbls. per day through a quarter-inch choke from a total depth of 7,503 feet and No. 1 Metzger made 714 bbls. through a quarter-inch choke from a total depth of 7,500 feet. No. 4-B Cobb is drilling below 7,200 feet and should reach the sand during the week. Contract was received for No. 1 Langham and the rig is being moved in.

Smith & McDannald received contract for three wells the past week. At Hastings No. 4 Turner is to be drilled for Stanolind Oil & Gas Co., No. 3 Lancaster is to be drilled for the Pure Oil Co. at Louise and Tide Water Oil Co. let contract for No. 1 Buyonton in the East Texas field. In the South Houston field, Smith & McDannald No. 1 Vallos is bottomed in oil sand at 3,965 feet and 7-inch casing has been cemented at 3,897 feet. It is located in the northwest part of the field and will extend production approximately 1,500 feet west. Five active rigs are located as follows, two in the St. Martinsville field for Tide Water Oil Co. and Continental Oil Co., one in Jennings for Shell Petroleum Corp., one in Jefferson County for Atlantic Oil & Production Co. and one in Calcasieu Parish for Bay Oil Corp.

Trinity Drillers, Inc., of San Antonio completed a good producer for the Montour Production Co. in the Lopez field of Webb County, Southwest Texas. In the same field they are coring for the sand on the Superior Oil Co. No. 7 Billings. In Duval County a wildcat is being started for the Howard Petroleum Co. 7 miles southeast of Loma Novia.

C & C Drilling Co. abandoned No. 1 Conner in Wharton County for Cockburn Oil Co. and has finished rigging up for No. 2 A. B. Lawrence, located on the Cotton Lake prospect for the Salt Dome Oil Corp.

Rowan Drilling Co. has reached the pay on the third well for the Amerada Petroleum Corp. at Cheneyville in Rapides Parish and has set 7-inch casing. The well is located 1,400 feet west of the discovery well and is bottomed in the Cockfield sand at 5,719 feet. The casing was cemented at 5,714 feet.

Nicklos Drilling Co. is drilling below 7,500 feet on No. 1 P. W. Miller, which was spudded about 12 days ago. The well is located in the Tepetate field and is being drilled for the Continental Oil Co. On the company's No. 1 Marcantel, a workover job, the hole has been sidetracked the second time and it is drilling ahead below 7,011 feet. It was originally drilled to 8,324 feet, plugged back to 8,311 feet, where it was tested and then plugged back, sidetracked and drilled to 1,919 feet, where it was plugged back the third time and sidetracked at 1,453 feet.

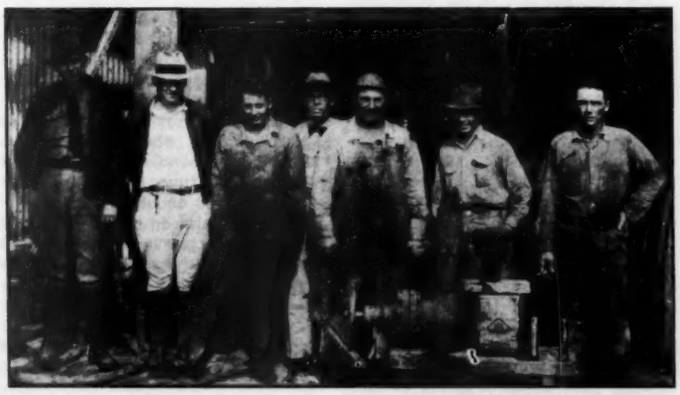
Ben (Bud) Coyle has started drilling operations on two wells for the Herton Oil Co. at the Jeanerette field in St. Mary Parish and is rigging up on a third test. No. 1 Banta is drilling in shale below 1,600 feet, No. 1 Carter is in gravel at 1,200 feet and No. 3 Roane is scheduled to be spudded during the week.

George W. McMurray, San Antonio, is drilling the Dirks Brothers No. 1 Dougherty, a wildcat in Live Oak County. The test had a show of oil in sand at 4,508-16 feet and is testing another at 4,656-62 feet. Another rig is drilling the Duncan & Perkins No. 2-B Campbell in the Ray field of Bee County.

Edwards Drilling Co. is drilling below 7,800 feet on No. 3 Stewart for the Coast Petroleum Co. at the Dickinson field and in the same field for Pure Oil Co. No. 3 Shelor is coring in sand below 8,000 feet. At the Jefferson Island dome in Iberia Parish, Jefferson Lake Oil Co. No. 274 Lake Piegneur was tested through perforated casing from 8,446-68 feet and is shut down waiting on orders after it failed to show anything of importance.

Al Buchanan of San Antonio has moved his heavy electric rig from

(Continued on Page 92)



Taken at the discovery well of Hamman Exploration Co. No. 1 May Cleveland, in Matagorda County. Left to right: John Hamman, Jr., geologist, Hamman Exploration Co.; E. S. Rutherford, drilling superintendent; Earl Warren, "Bo" McCain, lease owner; George Elam, Oliver Love and J. W. Shelby

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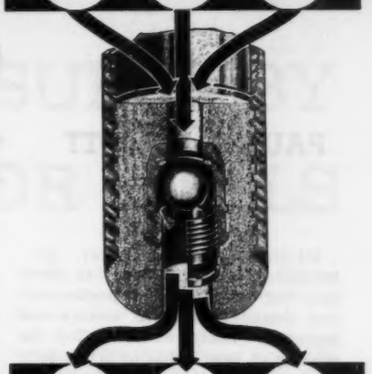

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Michigan Field Report

OIL SHOWINGS IN WILDCATS RESTORE OPERATORS' HOPES

By

PAUL A. ELLIOTT

MUSKEGON, Mich., Mar. 23.—Wildcats "stole the show" in Michigan last week with prospective success reported in three sectors and operators closely watching for the opening of new fields to bring daily production back to the 50,000-bbl. level, or higher, of last fall.

Water brought a temporary setback dampening original enthusiasm over a showing which filled the hole in Mountain Oil & Gas Co. No. 1 Archie Walter, SW NW NE section 17-11n-2w, in Emerson Township, Gratiot County. Operators planned to pull casing and reset to test the possibility of leakage from the Traverse stratum above the Dundee. After topping the Dundee at 3,223 feet, the well filled up 1,200 feet in five hours.

Water carried in T. F. Caldwell, Inc., No. 1 W. H. Pugsley, SW SE NW section 36-11n-5w, Ferris Township, Montcalm County edge well, made it difficult to determine the possibilities of Monroe production from a show of gas and oil encountered from 3,379 to 3,386 feet. Operators drilled to 3,391 feet but were dubious of success in the stratum below the Dundee, where the test previously failed to make commercial production, so decided to plug back to 1,015-30 feet, where a flow of about 12,500,000 feet of gas daily was struck in the Michigan Stray sands on the way down.

St. Louis Pipe & Supply Co. No. 1 John Yadovack, SE NW SE section 12-10n-2e, Brant Township wildcat in Saginaw County, also was being closely watched for Dundee possibilities.

Report of an oil and gas showing in the top of the Dundee at 2,853 feet was denied by N. A. King, a company official, who said his well had been confused with the Emerson-Gratiot strike originally started by St. Louis Pipe & Supply Co., but later sold to the present owners. It was to be drilled in early this week.

West Michigan Wildcats

Western Michigan also contributed a showing of about 100 feet of Traverse oil in the Northern Development Co. No. 1 Fred Burke et al, SW SE NW section 26-17n-15w, Logan Township, Mason County, near Walhalla.

Upper Traverse oil was encountered at about 1,920 feet and the well will be treated with acid, it was said by R. C. Lentz, of the Muskegon contracting firm of Lentz & Miller. They have a small Traverse well in section 10, same township, on the E. Montgomery lease originally drilled some years ago by Taggart & Welch, Big Rapids and Oceana County operators. Lentz & Miller have been producing it for the past four years and based new drilling operations last fall on the indications of success in the original well.

Max Pray No. 1 Victor Barothy test, SW NW NW section 29, same township, which reported a good showing of oil several weeks ago in the Traverse, reset casing to shut off water and drill into the Dundee.

Dragoon Development Co., of Muskegon, headed by Mr. Lentz, also is planning to drill to the Sylvania in No. 1 W. K. Young, SW NW NW section 15, Logan Township, shut down at 2,510 feet with a hole full of water in the Dundee for several months.

East Michigan Wildcats

Two other wildcats in Saginaw County, one of which was produced as a small well in the Traverse formation last fall, were about ready to test the Dundee and were attracting new attention to the eastern side of the lower Peninsula.

King Drilling Co. No. 1 Albert E. Kube, NE NE NE section 31-12n-3e, Richland Township, Saginaw County, topped the Dundee at 3,152 feet after producing for several months from the Traverse sands at about 2,830 feet. It was considered the discovery well of the Hemlock pool in Traverse sand.

Henry L. McEvoy No. 1 Jenacki, SE SE NW section 31, same township, had reached a depth of 3,100 feet and was about ready to drill into the Dundee.

Greatest interest among the wildcats, however, centered upon possibilities in the Emerson Township, Gratiot County wildcat located about 12 miles southwest of the Porter Township, Midland County, pool, largest in Michigan, and 15 miles east and slightly north of the Crystal Township, Montcalm County pool, second largest in the state. It is also 3 miles north and a mile east of the village of Ithaca and about 4 miles southeast of Alma.

The Walters test is one of several drilled during recent years on the so-called "Broomfield high," a structure named after the Broomfield Township, Isabella County gas field. The nearest Dundee failure was in section 5, Emerson Township, about a mile north of the present test.

It was drilled by V. M. Voorhees, his son, Robert and associates, formerly of Muskegon. Old Dutch Oil & Gas Co., of Muskegon, also holds considerable acreage around the well. Pure Oil Co., Shell Petroleum Corp. and other major operators have tested various sections of the "Broomfield high" during recent years seeking oil rather than gas and drilling to the lower formations. Broomfield was the first major producer of gas in the Michigan Stray formation, a shallow stratum ranging from 900 to 1,200 feet in various sections of central Michigan.

The Wittmer Co. No. 1 S. H. Kimball, SE SW SE section 15-7n-5w, Lyons Township, Ionia County, is the fourth dry hole encountered in a widespread Ionia County testing program during the past few months. Dundee was topped at 2,860 feet with a slight show of oil between 2,905 and 2,912 feet. Water was struck at 2,924 feet and the hole filled up at 2,940 feet. Drilling was suspended at 2,956 feet, where the hole will be plugged and abandoned.

Completion of the Wittmer test clears the county of all but one project, George Boyce No. 1 Wheeler, C SW NW section 10-8n-7w, Orleans Township, where a derrick was erected just before severe winter weather resulted in an almost complete shutdown in Michigan.

Frank Lyons No. 1 J. J. Alderson and others, NW SE SE section 33-17n-13w, Pleasant Plains Township, Lake County, was reported dry in the Dundee after topping the Traverse lime at 2,415 feet. The well has been shut down for some time.

Crystal Field

Success of the Duck Lake Oil Co. No. 1 fee well, beneath the bed of Duck Lake in the Crystal Township, Montcalm field, brought a rush to move in drilling equipment, to build islands or drive piling upon which to set it and drill up locations, about a dozen of which already had been made.

The Duck Lake well cased in the top of the Dundee at 3,167 feet and was completed at 3,191 feet. It was shut in pending deeper drilling after making about 80 bbls. the first hour. Varied estimates as to its potential ranged from a few hundred barrels to as high as 5,000 bbls. a day. It was started by Canadian interests operating as the Muskegon Pipe Line Co. but later changed to the Duck Lake Oil Co.

The possibility of litigation over the right to drill on the bed of the lake loomed again as it did before drilling was started last fall.

J. W. Leonard, Jr., and his associates, who opened the Crystal field, served a "peril" notice on the Duck Lake operators when the well was started, based on their leases of property abutting the entire east shore. Title to about 60 acres of the lake bed is claimed by the Duck Lake interests who purchased a strip 200 feet wide on the east shore off which they drilled. Legal question involves the problem of riparian rights, that is, whether ownership of the shore carries with it a strip of the same width to the center of the lake or whether it would include only a pie-shaped piece to a point in the center of a nearly circular body of water.

The state conservation department required the operators to post a cash bond of $10,000 against pollution either with oil or brine, a probable requirement of all future operators seeking to drill in the lake bed. To guard against pollution, Duck Lake Oil Co. banked the base of the rig and built a special sluice box to return slush to a pit on the shore.

Company officials announced they will start a second test immediately one location south of the No. 1. Three other state permits were obtained two months ago. Swanson Oil Co. may drill north of the first well. Cost of drilling beneath the lake is about 50 per cent greater than tests on land.

Strange & Fortney No. 2 H. J. and 1, Fisher, SW NW NE section 2-10n-5w, Crystal Township, was brought in with an initial flow of 50 bbls. an hour, or more than 1,000 bbls. a day. Dundee was topped at 3,185 feet, pay sands at 3,187 feet, and drilling was suspended at 3,188 feet.

Rowmoer Corp. No. 1 William E. Strait, NE NW NW section 3, same township, flowed 250 bbls., natural initial, from the Dundee topped at 3,202 feet and drilled to 3,205 feet.

United Producers & Royalty Co. temporarily abandoned No. 2 Ernest and Martha Conners, NW SW NW section 26-11n-5w, Ferris Township outpost, because of the failure of T. F. Caldwell, Inc., No. 1 Pugsley in the Monroe. It is about 1,300 feet deep.

Jetter Oil Co. No. 1 Lawrence Pitcher, SE SE NW section 5, Crystal Township, was more than 3,000 feet deep and expected to drill into the Dundee this week. Pure Oil Co. also is expected to complete its No. 2 and No. 3 Ernest Stedman tests, the former NW NW SE and the latter SE NW SE, both in section 11, Crystal Township. The latter has been shut down pending completion of Strange & Fortney No. 2 Lott, NE SW SE, same section, plugged back to acidize at 3,197 feet.

Midland County

The only completion of the six drilling for Dundee production in Porter Township, Midland County, was Pure Oil Co. No. 3-B J. H. Miller, NW NE NE section 18-13n-1w, Porter Township, acidized at a total depth of 3,428 feet and testing.

Pure set casing at 3,387 feet ready to drill in the No. 9 Charles Hill, NE SW NE, same section. Pure No. 9-C Laura E. Root, NW NE NW section 20, and No. 8-C Root, SW NW NW, same section, also were near the Dundee. Same company's No. 3 J. M. Hicks, NW SW SW section 14, and the No. 8 Floyd Younglove, SW SE SW section 17, were drilling below 3,400 feet.

Pure No. 6-A Joseph Novak, SW SE SE section 7-14n-2w, Greendale Township, Midland County, was drilling near Dundee completion at 3,580

(Continued on Page 92)

East and East Central Texas

SIZEABLE POOL IS ASSURED BY PEVETO AND WINDSOR WELLS

By L. E. BREDBERG

DALLAS, Tex., Mar. 23.—A new producing sand and a new producing pool has been definitely established for the East Texas district by Peveto and others No. 1 C. M. Carr in the M. V. Delgado Survey in the extreme northeast corner of Titus County, 1½ miles east of the small town of Talco. Windsor and others No. 1 Hughes & King is proving the pool 2½ miles in extent west of the Talco discovery, and this week the Humble Oil & Refining Co. No. 1 Groves, 2 miles due east of the discovery, will prove whether or not the pool is to be expanded that far to the east. If the Humble test proves a producer, the pool will already have been proven for a distance of 4½ miles from west to east along the fault through which the wells are cutting above the Paluxy sand, the new pay horizon for the district, which is the upper member of the Trinity sand section.

Gravity of the oil is low in the Peveto well, testing 27 degrees at 85° F., which brings the gravity down to 25.9 A.P.I. Some tests show it as low as 24.3 degrees gravity A.P.I. with a gasoline content of 13.6 per cent at 58 degrees, 14.3 per cent, having an asphalt base, which is one of the lowest gravity oils produced in the eastern half of the state. The well is flowing approximately 100 bbls. per day into pits with 1,000 bbls. of storage already full. The owners of the well are selling oil to other drilling tests in the area for fuel. Rods and tubing are in the hole, the well making the 100 bbls. per day under these conditions. A pumping unit is now being rigged up and the well is expected to pump considerably more than it can make on the small flow. A pumping test will be made this week.

The Windsor and others' test, over the line in Franklin County, has been swabbing into the pit, making around 2 bbls. of fluid per hour, mostly oil and filling up 175 feet in two and one-half hours when shut down to change swabs. It is bottomed at 4,180 feet with 7-inch casing set at 4,136 feet. Liner and tubing will be run and set preparatory to making a production test. It is sure to make some kind of a producer, but does not look as good as the Peveto well at present. The Peveto well is bottomed at 4,208 feet, the Windsor well running slightly higher on structure than the discovery.

Humble Oil & Refining Co. No. 1 Groves, in the Ben Jones Survey, east of the discovery and in Titus County, is drilling at 3,610 feet in red beds, about 400 feet above the pay found in the discovery. Coring will be done so not to miss any of the sand. The fault was reported to have been cut at 1,642 feet, much higher than in the other two tests in the area. Elevation is 309 feet, on derrick floor.

The Midwest Petroleum Co. and the Texfornia Co., both of Fort Worth, are moving in a 122-foot steel derrick; have contracted for 2,500 bbls. of fuel oil from the Peveto discovery well, and are to spud in to within a short time on their No. 1 Hocker & Hughes test in the M.E.P.& P.R.R. Survey, about 9 miles northeast of the Talco discovery, but in Red River County. A large block of acreage was assembled for this test, which is about 3½ or 4 miles south of a proposed test to be drilled on the E. M. Peek lands. The location of the Hocker & Hughes test is 3,060 feet from the east and 660 feet from the north lines of the survey. Claude Daily of Fort Worth worked the geology on the area surrounding the test.

Orr and others have derrick timbers moved in for a test on the Kurth Lumber Manufacturing Co. (Ludwig Lumber Co.) lands in the Elizabeth Smith Survey. Location is 3,960 feet from the north and 600 feet from the west lines of the survey. It is southwest of Allens Mill in the central part of the county and about 10 or 12 miles northeast of Clarksville, in Red River County.

Talco Townsite Test

Tom C. Patten, independent operator of Tyler is preparing to drill a townsite test on a 4.42-acre tract of the W. T. Sullivan lands in the M. V. Delgado Survey, on the west edge of Talco and about midway between the Peveto discovery and the Windsor extension, which will be an important test for the area. Contract has already been let for the drilling.

C. M. (Dad) Joiner, discoverer of the East Texas field, is drilling below 700 feet on the Lillianstern farm in the William Canon Survey, 4 miles southeast of the Talco discovery, and is moving in a derrick for a test on lands of the Huernich heirs, in the Banks Survey, about 8 miles east of the discovery. Both of these tests will be extremely important as they are considered as falling south of the fault cut by the discovery well and their drilling will furnish important geological information as both are to be deep wells, scheduled for the Trinity section.

With the completion of Peveto and others' well, acreage leasing and royalty buying will start anew, having halted when the well was shut down on February 7.

Good looking structures located along the Balcones Fault, on which the Talco discovery is located, will be tested for the Trinity sand pay in the future. Shallower drilling has not condemned any of the faults to the deeper producing possibilities, and the fault line from Northeast Texas at the Arkansas line west and southwest, thence south through Mexia, will see a number of deep tests drilled in the near future. The low gravity of the oil found in the Talco discovery will not be any deterrent to drilling for the deeper crude, for reserve supplies are in demand, refineries can handle the crude to a greater advantage than in previous years when they were not so well equipped.

Log of No. 1 Carr

Following is a copy of the drillers' log on Peveto and others No. 1 Carr, discovery well in Titus County:

	Feet
Elevation	370
Sand and shale to	20
Shale	776
Sand	796
Shale	982
Sand	1,004
Shale	1,611
Top Pecan Gap chalk	
Chalk	1,836
Shale	2,224
Sandy shale, streaks of lime	2,416
Shale and hard streaks of lime	2,544
Sandy shale	2,866
Shale and streaks of lime	3,032
Top Austin chalk	3,011
Chalk	3,054
Chalk, shale and sand	3,187
Chalk and shale	3,201
Bottom Austin chalk	3,204
Lime	3,204
Sandy shale	3,235
Lime and shale	3,296
Broken shale, lime and sand	3,340
Sandy shale	3,402
Sand	3,415
Woodbine section	3,436
Black shale	3,436
Sand	3,445
Ashy sand	3,470
Black shale	3,476
Black shale, streaks sand and ash	3,498
Black shale	3,542
Red beds	3,562
Black shale	3,595
Sandy shale	3,752
Shale and gravel	3,769
Lime and gravel	3,822
Lime	3,845
Shale and gravel	3,864
Bottom of section	3,866
Lime, streaks of shale and gravel	3,908
Lime and shale	3,930
Sandy shale	3,952
Georgetown lime	3,960
Shale and lime	3,986
Black and red shale and lime	4,008
Shale and streaks of lime	4,052
Shale and shells	4,096
Lime	4,183
Lime and shale	4,196
Sand showing oil (Paluxy)	4,208

The Windsor test logged the broken Pecan Gap chalk at 1,621 feet, hard Pecan Gap at 1,677 feet, base of broken Pecan Gap at 1,803 feet, top of Woodbine at 2,901 feet and cut the fault between the base of the Pecan Gap chalk and the Woodbine. Elevation is 362 feet. The Georgetown lime was topped at 3,385 feet and Paluxy sand at 4,157 feet.

Outlet

The Gulf Oil Corp. has the nearest pipe line to the Talco discovery, about 15 miles to the southwest, and a line may be constructed from this company's Mid-Continent-Gulf Coast trunk line at its Saltillo station to connect with and take crude from the new area. The Gulf Oil Corp. has a lease offsetting the lease on which the discovery was made, and also has other leases in the area on which it will probably drill this year. The offset lease will probably be drilled within a short time. The Gulf outlet would give a direct connection with Gulf Coast terminals.

Rumored Second Trinity Test

It is rumored that a second Trinity sand test is to be drilled by the Tide Water Oil Co. and Seaboard Oil Co. in the Cayuga field in northwest Anderson County, where it already has one such test, the first Trinity sand producer for East Texas, producing at around 6,000 feet from the Glen Rose, lower member of the Trinity series. That well first came in making only distillate, which later changed to oil, the daily yield increasing after the well was put on production. It is located on the Wills farm in the S. Edmondson Survey.

Five locations were staked in the Cayuga field, northwest Anderson County and one location was reported for the Long Lake field in the southwest corner of the county, Tide Water and Seaboard Oil Co.. joint owners of the greater part of the acreage in the two areas, making three of the five locations. At the same time three wells were completed in the two areas, two in the former field and one in the latter.

A deep test was abandoned 2 miles southeast of Whitehouse in Smith County this week by the Merrick Drilling Co. No. 3 Rushing, in the Jacob Herring Survey, was given up as a dry hole at a total depth of 4,500 feet.

A shallow test was given up in Nacogdoches County by Rosser and Jackson and a 2,991-foot dry hole was abandoned by Dave Crawford southwest of Cedar Creek, in the Pedro Varella Survey, Limestone County.

East Texas Field

At the railroad commission hearing at Austin on March 18, V. E. Cottingham, petroleum engineer for the commission, testified that conditions in the East Texas field justified an increase in production to 440,000 bbls. daily, an increase of around 3,000 bbls. more per day and about 15,000 bbls. per day more than he recommended for March. He stated that pressures in the field had increased the last 30 days from 1,201.5 pounds to 1,202.8 pounds, or an average of .054 pound per 1,000,000 bbls. of oil produced, the field producing at the rate of 437,496 bbls. per day during that time. He also mentioned that water conditions appeared slightly worse.

Locations and Completions

There were 64 locations staked in the field this week and 54 wells completed, 2 of which proved dry. Eight of the producers were pumpers, one was completed flowing by heads and one had to be swabbed.

The railroad commission reported the twenty thousandth producing well completed in the East Texas field on March 15. The well, Arkansas Fuel Oil Co. No. 13 Ferguson, in the Pru Survey, south of London in Rusk County. However, 20,057 wells have been drilled in the field, 57 of which

have been reported "dead" by the commission.

EAST TEXAS COMPLETIONS

Completions in the East Texas and East Central Texas districts together with their top of sand and total depth records and initial production were as follows:

Gregg County

Arkansas Fuel Oil Co. No. 17-C, 3,581-3,606 feet, 20 bbls. in 15 minutes; No. 11 Orms, 3,569-3,593 feet, 31 bbls. in 15 minutes. Deep Rock and Murphy No. 10 Prichard, 3,502-3,540 feet, 20 bbls. in 15 minutes: Flanagan No. 1 Johnson, 3,583-3,615 feet, 125 bbls. per hour. Humble Oil & Refining Co. No. 3 Shoults, 3,513 feet, dry and abandoned; in S. S. Davis Survey. L. G. & S. Oil Co. No. 5 McQueen, 3,574-3,604 feet, 20 bbls. in 45 minutes. Sell No. 9 Fisher, 3,592-3,658 feet, 27 bbls. in 15 minutes.

Stanolind Oil & Gas Co. No. 13 Flemister, 3,583-3,658 feet, 27 bbls. in 15 minutes; No. 6-A Jones, 3,591-3,669 feet, 17 bbls. in 15 minutes; No. 39-B McKinley, 3,623-3,672 feet, 14 bbls. in 15 minutes; No. 8 Rodden, 3,572-3,590 feet, 2 bbls. in 15 minutes.

Hamilton & Ellis No. 1 Utzman, 3,492-3,508 feet, 30 bbls. per hour, flowing by heads. Humble Oil & Refining Co. No. 16 Thomas, 3,542-3,618 feet, 40 bbls. per hour. Lee & Williams No. 1-A Carter, 3,594-3,596 feet, 5 bbls. in 10 minutes. Merrick Drilling Co. No. 2 Laird, 3,555-3,610 feet, 20 bbls. in 30 minutes. Midfield Oil Co. No. 4 Benson, 3,762-3,763 feet, 30 bbls. in 30 minutes. Selby & Lewis No. 12 Cole, 3,525-3,556 feet, 27 bbls. in 30 minutes.

Shell Petroleum Corp. No. 5 Elder, 3,511-3,531 feet, 32 bbls. in 30 minutes. Sinclair Prairie Oil Co. No. 15-B King, 3,457-3,500 feet, 22 bbls. in 15 minutes; No. 21-B King, 3,425-3,490 feet, 24 bbls. in 15 minutes. Sun Oil Co. No. 17 Morton, 3,466-3,468 feet, 30 bbls. per hour. The Texas Co. No. 49 Cole, 3,526-3,577 feet, 140 bbls. per hour.

Rusk County

Beren and others No. 7 Jones, 3,587-3,599 feet, 8 bbls. per hour on pump. Champlin & Bass No. 3 Roberson, 3,588-3,635 feet, 30 bbls. per hour. Humble Oil & Refining Co. No. 36 Peterson, 3,577-3,596 feet, 85 bbls. per hour. Hurtle Oil Co. No. 5 Sexton, 3,548-3,597 feet, 15 bbls. per hour on pump; No. 7 Sexton, 3,598-3,629 feet, 20 bbls. in 30 minutes.

Kirby Petroleum Co. No. 13 Reddic, 3,631-3,745 feet, 15 bbls. per hour. J. M. H. Oil Co. No. 1-B Gipson, 3,827-3,828 feet, 20 bbls. per hour on pump. Amerada and others No. 26 Stovall, 3,603-3,643 feet, 15 bbls. in 15 minutes. Anderson No. 3 Alford, 3,558-3,630 feet, 250 bbls. in 24 hours on pump. Arkansas Fuel Oil Co. No. 13 Ferguson, 3,628-3,653 feet, 22 bbls. in 15 minutes.

Atlantic Oil Producing Co. No. 10-C Pinkston, 3,613-3,692 feet, 50 bbls. per hour. Cook Drilling Co. No. 3 Frederick, 3,524-3,589 feet, 75 bbls. per day on pump. Humble Oil & Refining Co. No. 20 Box, 3,737-3,781 feet, 56 bbls. per hour: No. 14 Fuller. 3,686-3,700 feet, 71 bbls. per hour; No. 42-A Plowman, 3,639-3,702 feet, 67 bbls. per hour.

Lyons and others No. 3 Arnold, 3,656-3,695 feet, 20 bbls. per hour. McCutchin No. 1 Moyers, dry and abandoned 3,795 feet. Perot Oil Co. No. 1 Dickerson, 3,565-3,633 feet, 11 bbls. per day on pump. Petroleum Marketing Co. No. 2 Graham, 3,675-3,678 feet, 25 bbls. in 25 minutes.

Slaughter & Kugle No. 2 Frederick, 3,564-3,630 feet, 20 bbls. per hour on swab. Sun Oil Co. No. 6 Mason, 3,611-3,634 feet, 20 bbls. in 40 minutes. Tide Water Oil Co. No. 8-A Shaw, 3,707-3,707 feet, 20 bbls. in 30 minutes. Oil Union Oil Co. No. 2-F Frederick, 3,558-3,642 feet, 8 bbls. per hour on pump.

Smith County

Pounds, Jr., No. 3 Jackson, 3,810-3,811 feet, 20 bbls. in 15 minutes. W. A. Pounds, Jr., No. 4 Jackson, 3,821-3,822 feet, 20 bbls. in 20 minutes. Sun Oil Co. No. 1 Lanham, 3,829-3,830 feet, 20 bbls. in 23 minutes.

Upshur County

Barnett No. 3 Buckholt, 3,767-3,777 feet, 20 bbls. per hour. Conservative Oil Co. No. 14 Mackey, 3,676-3,678 feet, 20 bbls. in 40 minutes. Independent Supply Co. No. 5 Shelton, 3,736-3,737 feet, 20 bbls. per hour on pump. Monday Oil Co. No. 16 Younce, 3,593-3,621 feet, 140 bbls. per hour. Nivia Oil Co. No. 1 Morgan, 3,751-3,752 feet, 15 bbls. per hour. Stanolind Oil & Gas Co. No. 6-B Williams, 3,614-3,621 feet, 20 bbls. in 25 minutes.

Miscellaneous Completions

Anderson County—Cayuga Field

Tide Water and Seaboard Oil Co. No. 3 Campbell, total depth 4,046 feet, 151 bbls. in 24 hours through one-half inch choke. Westbrook Oil Co. No. 2 Wathen, total depth 4,063 feet, 50 bbls. in two and one-half hours.

Henderson County

E. P. Corley and others No. 2-B Loper, total depth 4,095 feet, 133 bbls. in 24 hours through one-eighth inch choke.

Limestone County

Dave Crawford No. 2 Ward, dry and abandoned 2,991 feet: southwest of Cedar Creek.

Nacogdoches County

Rosser & Jackson No. 2 Jackson, abandoned 40 feet.

Smith County

Merrick Drilling Co. No. 3 Rushing, dry and abandoned 4,500 feet; 2 miles east of Whitehouse.

Van Zandt County

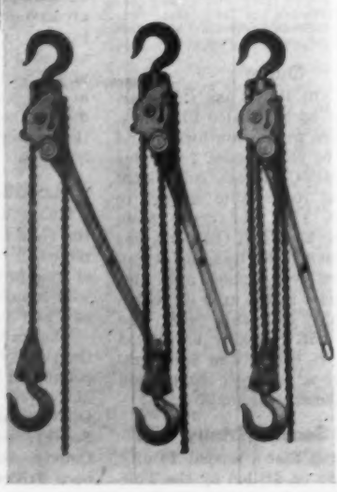
G. R. C. Oil Co. No. 5-A Brannon, total depth 1,209 feet, 17 bbls. in seven hours on pump.

Cass County

United Production Co. No. 2 Jones Unit, total depth 5,996 feet, tubing pressure 450 pounds, casing pressure 250 pounds, elevation 207 feet, 73 bbls. per hour on one-half inch tubing choke.

T. J. Fuson, petroleum engineer for Humble Oil & Refining Company at Houston, Tex., was transferred to the Dickinson district as district petroleum engineer. He replaces J. H. Galloway who has been transferred to the West Beaumont, Tex., district.

3 IN 1



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PIPE LINE EQUIPMENT & MATERIALS

HOUSTON, TEXAS

Oklahoma Operations

By
DAL DALRYMPLE

IMPORTANT WELLS DUE FOR TESTS BEFORE END OF WEEK

When Frank Russell, independent operator, staked location for No. 1 Oklahoma Heights, SE SW SE section 15-12-3w, north of the Oklahoma City limits, last week, the number of operations in the Capitol area was increased to 19. Thirteen producers have been completed in the area. The Russell test is the farthest north in the district to date, and is immediately north of the Barnsdall Oil Corp. No. 1 Banks-Geyer, just outside the city limits.

The British-American Oil Producing Co. No. 4 Piersol, NE SE NE section 22-12-3w, is the largest producer in the extension area to date. At total depth of 6,442 feet, it made 24-hour potential of 27,948 bbls., exceeding No. 3 Piersol by 135 bbls.

Important Wells Nearly Due

Interest in southern Oklahoma was sustained and due to reclaim the spotlight at the end of the week, with the drilling of plugs in Carter Oil Co. and others No. 1 Williams, SW NE SW section 27-2s-3w, in the Fox field, Carter County. Plugs were scheduled to be drilled March 28, and the hole then will be carried to its original depth of 8,088 feet, where it showed for a big producer last October. Difficulties caused by stuck pipe in the original hole caused operators to start new hole at 5,861 feet. Casing was set at 8,015 feet in the new hole. Another southern Oklahoma well of current interest is Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW section 26-6s-2w, in Love County. At plugged-back depth of 6,914 feet, from a sand in the Deese series, it had nearly a hole full of oil, but gas was insufficient to make it flow. Operators had moved in two 500-bbl. tanks preparatory to testing, but should they be unable to make a commercial producer by swabbing, it may be deepened to another sand encountered in the original hole at 7,003-40 feet.

A deep oil test for the gas area north of Erick in Beckham County was due to start. Carter Oil Co. No. 1 Davidson, C NW SW section 2-9-25w, ready to spud, will be the first test in the area to drill below the gas horizon, in which West Oak Gasoline Co. has completed three producers. The Carter company has a 3,000-acre block adjoining the West Oak acreage on the northeast.

Two state wildcats that had been closely watched have failed to find paying production. Sinclair Prairie Oil Co. No. 1 Barrett, NW cor. section 31-5s-6w, in Jefferson County, southeast of Waurika, was dry and abandoned at 4,355 feet, total depth. In Garvin County, McElreath & Suggett No. 1 Hyre, NE NE SE section 23-3-1w, near Pauls Valley, was bottomed at 4,810 feet and operators were reported ready to abandon. Further up the hole it had encountered oil showings and caused considerable excitement until water intruded.

Oklahoma County

Three of the recent big producers in the Capitol extension area of the Oklahoma City field were among completions of the week. The biggest was British American Oil Co. No. 5 Piersol, NW SW SW section 22-12-3w. It flowed 4,726.56 bbls. of oil in six hours, giving it a 24-hour potential of 20,714.52 bbls. based on its last four-hour flow. Gas measured 26,000,000 feet daily. Second Wilcox sand, the producing horizon, was topped at 6,343 feet, total depth 6,425 feet.

Phillips Petroleum Co. and Black Gold Petroleum Co. No. 1 Sawyer, SE NE NE section 22-12-3w, which extended production in the Capitol area one-half mile north, was the second largest completion. It was given a potential rating of 20,090 bbls. after flowing 4,917.48 bbls. in six hours. The six-hour flow was larger than that of the No. 5 Piersol, but its production in the last four hours of the potential test was smaller than that of the Piersol. In the last four hours No. 1 Sawyer produced 3,348.35 bbls., while No. 5 Piersol flowed 3,452.42 bbls. in the last four hours. The No. 1 Sawyer topped second Wilcox at 6,384 feet, total depth 6,478 feet. Gas gauged 17,000,000 feet.

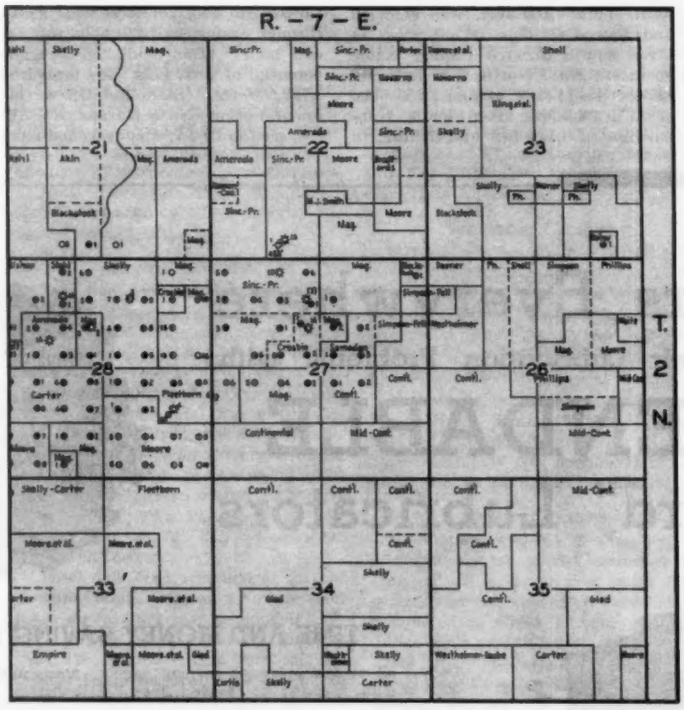
The third completion was British American Oil Co. and Phillips Petroleum Co. No. 1 Hampton, NE NE SW section 23-12-3w. After topping Wilcox sand at 6,389 feet and drilling to 6,518 feet, total depth, it flowed 2,212.51 bbls. in six hours to give it potential rating of 9,068 bbls.

In the Edmond area of Oklahoma County, Marathon Oil Co. completed No. 9 Dahl, SW NW SE section 31-14-3w. Second Wilcox sand was topped at 6,672 feet, total depth 6,730 feet. In the six hours of potential test it flowed 687.38 bbls., to give it a 24-hour rating of 4,127.76 bbls. Gas gauged 28,000,000 feet.

New work starting in Oklahoma County was as follows: British-American Oil Co. No. 1 Piersol, SE cor. section 22-12-3w, rigging up rotary to deepen from 6,362 feet; same operator's No. 2 Alta Vista, SW NW SW section 23-12-3w, moving in material; Barnsdall Oil Co. and Bay Oil Co. No. 1 Edwards, SW SE SE section 15-12-3w, building rig; Barnsdall Oil Co. and Fairfax Oil Co. No. 5 Bracht, SE SE SW SW section 23-12-3w, rigging up rotary; Marathon Oil Co. and other No. 1 Winters, SW SW NW section 20-13-3w, digging cellar; Continental Oil Co. No. 7 Young, NE NW NW section 31-14-3w, digging cellar; Petroleum Co. No. 1 McCracken, NE NE NW section 31-5-4, location.

Sinclair Prairie Oil Co. and others No. 1 Stites, SE SE SW section 8-13-3w, in the Britton area, total depth 6,630 feet, flowed 30 bbls. oil and produced about 5,000,000 feet of gas a day, and was acidized with 4,000 gallons. Dolomite was topped at 6,537 feet.

In the Edmond area, Pure Oil Co. No. 6 Malm, SE SW SW section 30-14-3w, flowed 375 bbls. of oil in four hours after acidizing, gas gauging 17,500,000 feet. Operators were killing it to shoot. Second Wilcox sand was topped at 6,641 feet, total depth 6,708 feet.



Oil men wonder where Fitts will go from here. This is the busy east end of the Pontotoc County field, and its limits are undetermined

(Mid-Continent Map Co., Tulsa)

Estimated Production

Estimated daily average production of Oklahoma for the week ending March 21 and for the preceding week is as follows:

	Barrels	
	Mar. 21	Mar. 14
Allen	6,725	6,800
Asher-West Asher	900	875
Burbank	7,350	7,500
South Burbank	13,800	13,750
Balance Osage	23,500	22,750
Blackwell	4,550	4,500
Bristow-Slick	8,400	8,300
Chandler	3,900	3,950
Crescent	5,050	5,250
Cromwell	3,900	3,850
Cushing-Shamrock	11,750	11,500
Duncan district	3,900	3,900
Edmond	13,375	14,950
Fish	11,300	10,875
Fitts	53,225	51,400
Gray	1,700	1,650
Graham	3,800	3,800
Healdton	8,925	8,900
Hewitt	4,450	4,450
Holdenville	1,125	1,100
Keokuk	6,275	6,150
Konawa	1,900	1,850
Lucien	11,700	11,750
Marshall-Lovell	1,050	1,000
Oklahoma City	127,025	126,775
Papoose	1,100	1,075
Polo	3,350	3,500
Sasakwa and townsite	4,025	3,050
Sholem-Alechem	3,650	3,600
Seminole field:		
Bowlegs	11,925	11,175
Carr City	6,775	7,025
Earlsboro	7,750	7,775
South Earlsboro	925	850
East Earlsboro	12,100	11,400
Little River	13,875	13,700
East Little River	1,100	1,150
Maud	1,025	1,025
Mission	2,400	2,675
Seminole	10,650	10,850
East Seminole	1,875	1,925
Searight	5,800	4,350
Total Seminole	76,200	73,900
St. Louis-Pearson	23,950	23,650
Tatums	3,525	3,575
Tonkawa-Garber-Thomas	5,500	5,400
Wewoka	3,925	3,850
Yale-Jennings	4,050	4,050
Other pools	57,050	57,550
Total Oklahoma	525,900	514,775

Hughes County

Four Hughes County completions included three new producers in the rapidly growing Olympic pool. Manahan Oil Co. and others No. 5 Oliphant "C," NE NE SW section 1-9-8, topped Senora sand at 1,667 feet, total depth 1,733 feet, was shot with 60 quarts and flowed 357 bbls of oil in seven hours, completed. George Manahan and others No. 6 Oliphant

'B," SE NE SE section 11-9-8, produced 247 bbls. of oil in 24 hours after a shot and was completed. Senora sand was topped at 1,803 feet, total depth 1,835 feet. Same operators' No. 3 Dixon "C," SE NW NE section 12-9-8, flowed 160 bbls. in 24 hours and was completed at 1,769 feet, total depth, in Senora sand topped at 1,714 feet.

The other completion was in the Hughes County sector of the Sasakwa area. Stanolind Oil & Gas Co. No. 2 Harris, SW NE NW section 8-6-8, topped Wilcox sand at 4,142 feet and was bottomed at 4,153 feet. It flowed 1,230 bbls. of oil in 12 hours and was completed.

New work in Hughes County was as follows: J. A. Chapman No. 1 fee, SE NE NW section 1-9-8, set 10-inch casing at 42 feet; George Manahan and others No. 6 Oliphant "C," NW NE SW section 1-9-8, rigging up rotary; same operators' No. 1 Oliphant "F," SE NE SE section 2-9-8, location; Serran No. 1 Tucker, SW SE SE section 2-9-8, standardizing; George Manahan and others No. 3 Simmer, SW cor. section 12-9-8, location; J. W. Fitzpatrick No. 1-A Culver, NE NW NW section 13-9-8, building rig.

Okfuskee County

No wells were completed in Okfuskee County, but the following new work was reported: Ralvern Oil Co. No. 5 Johnston, C NE NW section 11-11-8, rig; Stekoll and others No. 1 Yahola, SE SW SW section 2-10-11, rigging up machine; Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Carolina, SW cor. section 31-10-9, set 10-inch pipe at 34 feet; Moffitt & Kilpatrick No. 1 Pharoach, C N half NW NE section 35-11-11, old well being deepened, drilling at 2,287 feet; R. Staples No. 4-A Brown-Wilson, SW NW SW section 22-12-11, location.

Seminole County

Only one new well was completed in Seminole County. Francis Oil Co. No. 2 Wetley, SE SE NE section 24-5-5, in the Byng area, topped Hunton lime at 2,365 feet, total depth 2,548 feet. It was acidized and flowed 122 bbls. of oil net in 24 hours, completed.

New work in Seminole County: Sinclair Prairie Oil Co. No. 2 Coody "B," SE NE SW section 17-9-7, building rig; Continental Oil Co. No. 2 Baring, SW NE SE section 17-9-7, cellar; Texas Co. No. 3 Steward, SW SW NE section 19-9-7, location; Exchange Drilling Co. and others No. 1 Mills, NW NE SE section 19-9-7, location.

In the Wewoka area, E. W. Jones No. 1 Shiffeet, NW NW NE section 34-8-8, swabbed 135 bbls. of oil in 12 hours. Wilcox sand was topped at 4,173 feet, pay at 4,182 feet, total depth 4,184 feet. Wood Oil Co. No. 2 Homestake, SW NE SW section 28-9-6, encountered Wilcox sand at 4,138 feet, total depth 4,150 feet, swabbed 35 bbls. of oil in one hour; was shot with 10 quarts, swabbed 20 bbls. in one hour and was cleaning out. Carter Oil Co. and others No. 4 Pipkin C-28, C W half SE SW section 2-10-6, topped Hunton lime at 4,148 feet, total depth 4,160 feet, was acidized and flowed 60 bbls. of oil gross in three hours, through tubing. Same operators' No. 1 North, C W half SW SE section 11-10-6, swabbed 255 bbls. of oil in 20 hours, after topping Hunton lime at 4,114 feet and drilling to 4,123 feet. Gulf Petroleum Corp. and others No. 2 Scott C-43, C E half SE NW section 11-10-6, swabbed 77 bbls. of oil in six hours from Hunton lime topped at 4,151 feet, total depth 4,152 feet. Carter Oil Co. No. 1 Black, C E half NW NW section 23-10-6, topped Hunton lime at 4,248 feet, total depth 4,261 feet, and after swabbing, shooting and acidizing flowed 330 bbls. of oil in six hours through tubing. Same operator's No. 2 Grisso, C W half SE NW section 23-10-6, flowed 108 bbls. gross in six hours through tubing, after acidizing. Misener sand was topped at 4,247 feet, total depth 4,260 feet.

Pontotoc County

The second producer in the Jesse area of Pontotoc County, Continental Oil Co. No. 1 Simpson, SW SW NE section 12-1-7, was completed. Bromide was topped at 4,160 feet; McLish, the producing horizon, at 4,417 feet; total depth 4,692 feet. It flowed 1,222 bbls. of oil while drilling the last 30 feet, flowed 2,045 bbls. in four hours while pulling drill pipe, and on completion flowed 418 bbls. in the first hour through casing, pinched, and was then shut in.

The week was quiet in the Fitts pool, so far as completions were concerned. E. H. Moore and others No. 7 Wirick, NW NE SW section 29-2-7, was the only well completed. It topped Bromide at 3,965 feet, McLish 4,170 feet, total depth 4,378 feet. It flowed 345 bbls. the first hour gross, through casing, and 250 bbls. the second hour. After acidizing, it made potential of 2,852 bbls. Gas measured 1,722,000 feet. Stanolind Oil & Gas Co. and others No. 8 Harden, NE SW SW section 30-2-7, was deepened from 4,180 feet to 4,405 feet, and recompleted at the new depth. After acidizing, it made potential of 2,795 bbls.

Patsy Oil Co. No. 1 Magnuson, SW SE SE section 23-2-7, old wildcat northeast of Fitts production, was temporarily abandoned at 4,785 feet, total depth. It had showings of gas and salt water in Hunton lime, topped at 4,330 feet. Sylvan shale was topped at 4,760 feet. Gulf Oil Corp. No. 1 Emry, SW SW NE section 15-2-6, wildcat northwest of Fitts, was dry and abandoned at 6,600 feet, total depth. Red granite was topped at 6,314 feet.

In northern Pontotoc County, Senora Oil Co. No. 5 Gilmore, SW SE NE NE section 22-5-8, topped Allen sand at 782 feet, total depth 816 feet, plugged back to 796 feet, shot it, pumped 15 bbls. of oil in 24 hours and was completed. Sinclair Prairie Oil Co. No. 1 Gordon "B," SE SE NW section 21-5-5, was acidized, pumped 15 bbls. of oil and 15 bbls. of water in 24 hours and was completed. It was an old well deepened from 1,955 feet to 2,655 feet. Hunton lime was topped at 2,275 feet.

New work in Pontotoc County follows: Continental Oil Co. No. 1 McCarty, SE SE NW section 12-1-7, first big producer at Jesse, moving in pressure drill to deepen from 4,641 feet; Fleetborn Oil Co. No. 2 Morin, SW SE SE section 20-2-7, rig corners; Mid-Continent Petroleum Corp. No. 2 McKoy, SE SE SW section 20-2-7, location; Magnola Petroleum Co. No. 5 Burris "A," SW SW NW section 27-2-7, cellar and pits; same operator's No. 6 Burris "A," NE SW NW section 27-2-7, cellar and pits; same operator's No. 7 Simpson, SW NE NE section 29-2-7, building rig;

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Carter Oil Co. No. 5 Richards, SW NE SE section 30-2-7, building rig to deepen from 4,180 feet.

Fleetborn Oil Corp. No. 1 Morin, SE SE SE section 20-2-7, after acidizing, flowed 290 bbls. of oil gross the first hour and 190 bbls. the second hour through tubing and was shut in for six hours. It then flowed 72 bbls. in one-half hour through 1-inch tubing and 250 bbls. in the next two hours through one-half inch tubing choke. Hunton lime was topped at 3,540 feet, total depth 3,852 feet. Continental Oil Co. No. 1 Holkum, NW NW SE section 27-2-7, flowed 761 bbls. net in 10 hours through casing after topping Bromide at 3,900 feet, drilling to 3,950 feet and acidizing. Drilling was resumed and McLish was topped at 4,119 feet. At 4,141 feet it flowed 1,110 bbls. in 24 hours while drilling. Magnolia Petroleum Co. No. 2 Metropolitan, NE NE SW section 27-2-7, was acidized with 5,000 gallons and made several flows, the largest being 265 bbls. gross in the first hour. It was treated a second time with 5,000 gallons of acid and flowed 435 bbls. of oil gross the first hour and 186 bbls. net the second hour through casing.

Magnolia Petroleum Co. No. 1 Shelton, SW SE SW section 28-2-7, topped Bromide at 3,900 feet, McLish 4,070 feet, and was bottomed at 4,325 feet. It was acidized and flowed 23.69 bbls. of oil in four hours through casing and tubing, then flowed 292 bbls. in eight hours through casing and made potential of 339.98 bbls. Same operator's No. 3 Smith, NE SE NW section 28-2-7, at total depth of 4,288 feet in McLish flowed 431 bbls. the first hour through casing and was acidized. J. E. Crosbie, Inc., No. 3-A Harden, NE cor. section 30-2-7, total depth 3,817 feet, was treated with acid and flowed 264 bbls. of oil the first two hours through casing, 171 bbls. the next two hours through tubing and 105 bbls. the fifth hour through casing.

In the East Ada district, Boettcher Oil & Gas Co. No. 3 Starrett, SW SE NE section 23-4-7, total depth 1,725 feet, flowed 70 bbls. of oil in 24 hours through tubing.

A Pontotoc County wildcat, the Mid-Texas Petroleum Co. No. 1 Whitney, SW SW SE section 30-5-4, in northwestern part of the county, west of the Bebee area, drilled to 1,946 feet, total depth, and swabbed 100 bbls. of oil in 12 hours.

Osage County

Sinclair Prairie Oil Co. No. 1 Osage, on the west side of the South Burbank pool of Osage County, was completed as a small pumper. Bartlesville sand was topped at 2,712 feet. At 2,727 feet, total depth, water intruded and it was plugged back to 2,724 feet. After a shot it pumped 15 bbls. of oil in five hours.

Ohio Osage Oil Co. No. 24 Osage, SW cor. section 9-21-9, had sand at 270-309 feet, total depth, was shot with 40 quarts, pumped 7 bbls. of oil and 2 bbls. of water and was completed. Same operator's No. 25 Osage, cor. section 9-21-9, was completed as a repressure well at 322 feet, total depth. J. W. Fields No. 5 Osage, NW NE SW section 12-21-11, topped Layton sand at 535 feet and was completed as a salt water disposal well at 804 feet, total depth. Bay Oil Corp. No. 2 Osage, NE NW SW section 25-22-7, swabbed 40 bbls. of oil in 24 hours after an 80-quart shot and was completed. Hominy sand was topped at 2,800 feet, Arbuckle lime 2,897 feet, total depth 2,910 feet. Morrison & Alexander No. 5 Osage, SE NE SE section 35-25-11, topped Bartlesville sand at 1,670 feet, total depth 1,728 feet, swabbed 80 bbls. of oil in 24 hours and was completed.

The biggest Osage County producer of the week was an old well deepened. Comail Oil Co. No. 6 Osage, old total depth 1,903 feet, was drilled deeper and found Bartlesville sand at 2,227-80 feet. It flowed 430 bbls. of oil in 36 hours, and was completed as a 220-bbl. a day producer.

New work in Osage County follows: Midco Petroleum Corp. and others No. 1 Osage, NW NW SE section 11-23-6, wildcat location southwest of Naval Reserve; Q. Nadel No. 4 Osage, SE SW SE section 18-22-11, rigging up to drill deeper; Lewis Production Co. and Continental Oil Co. No. 13 Ke-Ne-Kah, NE SW SW section 16-24-7, location; Lewis Production Co. and Texas Co. No. 6 Claremore, NE SE SE section 17-24-7, moving in tools; Lewis Production Co. No. 14 Mullendore-B, SW NW NW section 21-24-7, building rig; Philter No. 12 Osage, NE NW SW section 22-25-12, location: Texas Co. No. 13 Baker, C W half NE NW section 28-26-6, location.

Continental Oil Co. and Gulf Oil Corp. No. 3 Osage, NW NW SW section 22-24-7, topped Bartlesville sand at 2,466 feet, total depth 2,577 feet, and production was estimated at 5 bbls. of oil per hour.

Kay County

Shell Petroleum Corp. and Continental Oil Co. No. 2 Lawrence, SE SE NW section 5-28-1w, in the Braman area of Kay County, had deepened to 2,748 feet, set pipe and was waiting. Old total depth was 2,382 feet. It was the only new activity reported in the county.

Logan County

Only one new operation was reported in Logan County. Carter Oil Co. and Gulf Petroleum Corp. No. 2 Walker, SW NE NE section 33-17-4w, in the Crescent area, was a rig.

Stanolind Oil & Gas Co., Amerada Petroleum Corp. and Eason Oil Co. No. 1 Gragg (Bird), SW SW SE section 20-18-4w, Logan County wildcat, was shut in after producing 12 bbls. of distillate per hour and 35,000,000 feet of gas. Two and one-half inch tubing was set at 6,098 feet, total depth 6,122 feet.

Work has been resumed at an old Logan County wildcat that has been shut down since last September. W. N. Anthony No. 1 Fruin-Eckman, SE SE SW section 4-16-1, east of the South Langston pool, was bailing to test. It topped Wilcox sand at 5,265 feet, drilled to 5,285 feet, water intruded, and it was plugged back to 5,181 feet, and was shut down because of litigation. It had had slight showings of oil and water.

Pawnee County

Peter Adamson, Jr., No. 2 Parker, SE SW SE section 24-21-7, an old well in the Cleveland area of Pawnee County, was rigging up to drill deeper. Old total depth was 2,771 feet.

Pushmataha County

C. W. Whitehead and others No. 1 Messer, SE SW SW section 35-3s-18, old wildcat in southern Pushmataha County, was reported as temporarily abandoned at 3,560 feet, total depth. It has been shut down since last December. Operators started deepening the wildcat from old total depth of 2,405 feet in January, 1935, and drilled and shut down intermittently throughout the year.

Tulsa County

Johnson Oil Refining Co. No. 1 Stebbins, SE SW SE section 30-19-10, pumped 18 bbls. of oil in 24 hours, completed. Red Fork sand was topped at 2,234 feet, total depth 2,261 feet. Bovaird No. 19 Coser, SW SW NE section 3-17-12, topped Wilcox sand at 2,176 feet, total depth 2,375 feet, was shot with 110 quarts and produced 25 bbls. of oil in 24 hours, completed. Owen No. 6 Carvey, NW SW NW section 27-18-14, drilled to 754 feet, total depth, produced 500,000 feet of gas and was completed. Eppler No. 1 Morrison, SW SE SW section 31-18-14, was dry and abandoned at 1,643 feet, total depth.

The following new work in Tulsa County was reported: Sinclair Prairie Oil Co. No. 13 Durant, NW NW SE section 3-17-12, drilling at 1,820 feet; Anthony No. 1 Gilcrease, SW cor. section 24-17-12, deepening from old total depth of 1,670 feet, drilling at 1,920 feet; Bovaird No. 20 Coser, CWL SW NE section 3-17-12, drilling at 1,815 feet.

Muskogee County

The only Muskogee County completion was an old well drilled deeper. Robinson No. 2 Landon, CWL NE SW section 17-13-16, deepened from 2,132 feet to 2,157 feet, was shot and swabbed 25 bbls. of oil in 24 hours.

New work in Muskogee County: Foltz No. 4 McIntosh, CWL NW SE section 17-14-17, rigging up; Musselum No. 1-B Moore, NE NE SW section 13-14-16, rigging up.

Wagoner County

Webb No. 1 Boudinot, SW NE NE section 11-17-15, produced 1,000,000 feet of gas in 24 hours and was completed at 1,158 feet, total depth. Greer and others No. 3 Tiger, NE SW NW section 11-17-15, was dry and abandoned at 820 feet.

New work starting was as follows: Moore No. 1 Nave, NE NE SW section 9-17-15, spudding; Greer No. 4 Tiger, CSL NW NW section 11-17-15, had gas showing at 1,130-1,135 feet.

Creek County

Shibley Oil Co. No. 2 Timothy, C NW NW section 12-17-7, swabbed 60 bbls. of oil after a shot with 140 quarts and was one of two producers completed in Creek County. It had Jones sand at 1,962 feet, total depth 2,002 feet. The other producer was Oklahoma Gasoline Plant Co. No. 7 Woods, NE NE SW section 27-18-8, which had Red Fork sand at 2,575-2,592 feet, total depth, was shot and swabbed 25 bbls. of oil in 24 hours. The third completion of the week was C. O. Buckles No. 6 Frailey, NW NW SE section 22-18-8, dry and abandoned at 3,054 feet, total depth.

Only new operation reported in Creek County was an old well being deepened. Ganolia Petroleum Co. No. 1 Litchfield, NW NW NE section 21-17-7, was moving in tools to deepen from 2,687 feet, old total depth.

Okmulgee County

Howard No. 1-A Rentie, NW NW SE section 18-14-15, produced 15 bbls. of oil in 24 hours after a shot and was completed. It topped Booch sand at 1,182 feet, total depth 1,224 feet. Klingensmith No. 12 Farr, NW SE NW section 35-16-11, topped Dutcher sand at 2,302 feet, total depth 2,329 feet, flowed 390 bbls. of oil in 24 hours and was completed. Batser No. 1-A Jefferson, NW SW SE section 4-14-15, topped Booch sand at 1,045 feet and was dry and abandoned at 1,074 feet, total depth.

New work in Okmulgee County follows: McAdams No. 1 Brown, NW SW SW section 16-13-12, location; Strozier No. 1 Steil, C SW NE section 20-16-11, set 6-inch casing at 2,064 feet, total depth 2,191 feet, and was waiting. Sinclair Prairie Oil Co. No. 1 Tiger, SE SW NW section 29-13-12, old total depth 2,329 feet, was cleaning out to deepen.

Pottawatomie County

Sinclair Prairie Oil Co. No. 4 Deatherage, SW NE NW section 28-7-4, in the St. Louis district, was the only Pottawatomie County completion. Simpson Dolomite, the producing horizon, was topped at 4,110 feet. At total depth of 4,162 feet, the well was shot and swabbed 270 bbls. of oil in 12 hours. It later swabbed 300 bbls. of oil and 20 bbls. of water and was completed.

One new test was reported in Pottawatomie County. J. H. Hurst No. 1 Bolton, NE NE NW section 5-10-4, was a location.

Conly Drilling Co. and others No. 2 Vinson, SW NE NE section 13-7-4, in the St. Louis district, topped Wilcox sand at 4,062 feet and was bottomed at 4,072 feet. It swabbed 300 bbls. of oil in 24 hours and then pumped 240 bbls. in 24 hours.

Lincoln County

Two good producers in Lincoln County were completed. Amerada Petroleum Corp. and others No. 1 Laffoon "A," SE NE NE section 9-13-6, swabbed 1,138 bbls. of oil in 24 hours. Dolomite was topped at 4,127 feet, first Wilcox sand 4,153 feet, second Wilcox sand 4,177 feet, total depth 4,260 feet. The well is in the Laffoon area of southeastern Lincoln County. Oil was of low gravity.

In the Chandler district, Magnolia Petroleum Co. No. 2 Epps, SW SE SE section 32-15-3, flowed 1,638 bbls. of oil in 24 hours, completed. Production was from Wilcox sand, topped at 5,075 feet, total depth 5,078 feet.

Two new Lincoln County tests were reported. Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Lewis, SE SW SE section 32-15-3, was a location; Sinclair Prairie Oil Co. No. 2 Hoyt, NE NW NE section 5-14-3, was building rig.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Crawford, NE NE SE section 35-15-2, wildcat in Lincoln County northwest of the Chandler area, flowed 30 bbls. of oil per day, cutting 3 per cent water and 12 per cent basic sediment, after acidizing with 3,000 gallons. Total depth was 5,243 feet, plugged back to 5,150 feet.

Carter County

Shell Petroleum Corp. No. 3 Higgins "A," NW NW SE section 6-2s-2w, in the Wildcat Jim area of Carter County, flowed 116 bbls. of oil through tubing in 24 hours and was completed. Total depth was 1,967 feet. First sand was topped at 1,619 feet. Same operators No. 62 Wirt Franklin, C W half SE NE section

(Continued on Page 91)

Texas and Louisiana Gulf

HIGH GRAVITY OIL POOL IN WESTERN BRAZORIA COUNTY

By F. L. SINGLETON

HOUSTON, Tex., Mar. 23.—The Lockridge prospect, also known as Sandy Point, western Brazoria County, was added to the list of producing fields on the Gulf Coast when Gulf Oil Corp.'s No. 1 Fairfield, located in the A. Robinson Survey, began flowing an estimated 75 bbls. of 43 gravity oil per day from a total depth of 6,277 feet. The well was brought in March 20 and while no accurate gauge was available it has the appearance of being an important discovery. The gas pressure at the time of completion was around 1,800 pounds.

Production is from 10 feet of Frio sand topped at 6,267 feet. It was originally tested at 6,274 feet, but was drilled 3 feet deeper before screen was set. Seven-inch casing was cemented at 6,255 feet. The Discorbis was topped at 5,636 feet, Heterostegina at 5,878 feet and the Marginulina at 6,035 feet.

This prospect extends over the line in Fort Bend County and was discovered in 1929 by Gulf Oil Corp. Numerous tests have been drilled in the area and several showings of oil and gas were encountered. No. 1 Fairfield is the second well drilled by the company within the past few months. It is located 4,500 feet due north of No. 1 Wilkes, which was abandoned in salt water sand at 6,647 feet. Based on geological markers, the discovery well is several hundred feet higher than the dry hole. Companies holding protection acreage are Stanolind Oil & Gas Co., Magnolia Petroleum Co., Sinclair Prairie Oil Co. and the Sun Oil Co.

Calhoun County

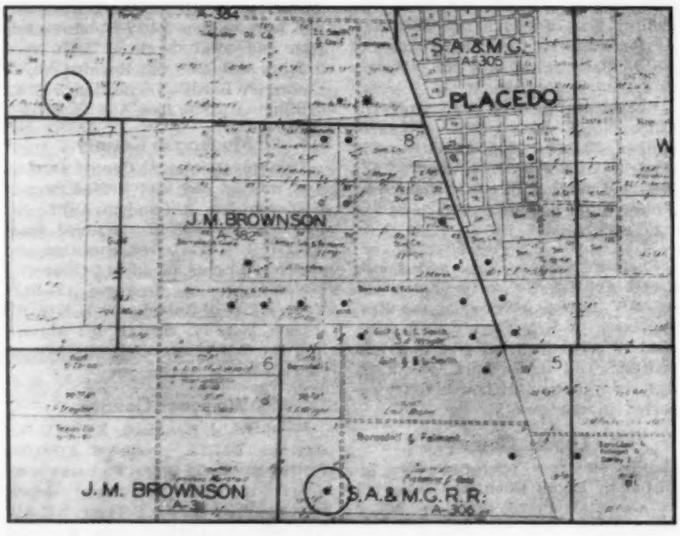
In the Green Lake area, western Calhoun County, Humble Oil & Refining Co. was preparing to make a drill stem test on No. 1 Patrick H. Welder, located in the Jose Maria Rios Survey, after 5 feet of oil sand had been cored at 5,815-20 feet. Several oil showings have been encountered below 5,500 feet, and one drill stem test made from 5,514-19 feet showed 210 feet of mud, 150 feet of oil, 90 feet of oily mud and 30 feet of salt water. This is the third test drilled by the company on this prospect.

Wharton County

Texas Co. was running tubing in No. 1 Joseph Marek, preparatory to testing after casing perforations had been made with 40 shots from 4,600-12 feet. The well is located 1 mile northwest of the Pickett Ridge field, Wharton County, and is being tested after the hole had been plugged back from the contract depth of 5,000 feet, to test a sand from 4,597-4,619 feet, which two weeks ago showed 30 feet of clean oil on a drill stem test. This sand is somewhat higher than the wells to the southeast and if productive it will open considerable acreage for development.

Van Vleck Extended

The Van Vleck field, Matagorda County, was extended two directions by the completion of two wells by Skelly Oil Co. No. 5-B Cobb extended the field about 900 feet east when it flowed 826 bbls. per day through a quarter-inch choke with tubing pressure 1,375 pounds and casing pressure 1,175 pounds. Gravity of the oil is 38 degrees. The well is bottomed in the Frio sand at 7,503 feet and is producing through perforated casing from 7,478½-7,500 feet. To the southeast about a half mile, No. 1 Metzger flowed 714 bbls. through a quarter-inch choke with tubing pressure 1,075 pounds and casing pressure 1,225 pounds. Perforations were made with 48 holes from 7,480-7,500 feet. A rig is being moved in for No. 1 Langham, located 466 feet south of the north line and midway between east and west lines of a 100-acre lease in the M. Cummings Survey.



Southwestern section of the Placedo field, Victoria County, showing location of two extension wells

(Map courtesy of W. W. Zingery, Second National Bank Building, Houston, Tex.)

Amelia Tests Look Bad

Two more failures seem certain of being marked up in the Amelia field, northern Jefferson County, as two wells drilled by Humble Oil & Refining Co. are drilling ahead after failing to pick up the discovery horizon. East of the discovery well about 3,000 feet, No. 1-B Broussard is drilling in shale below 7,300 feet, while to the west No. 1 Miller is in the same formation below 7,000 feet. The failure of the latter test is somewhat of a surprise since it is located due north of what was thought to be one of the highest wells on the structure. Until further development is done, it will be unsafe to theorize the trend of the field, as it appears to be a very faulted area.

To the south of the discovery well, about 2½ miles, Magnolia Petroleum Co. has made an interesting location on its large block for No. 1 H. B. Funchess, situated 1,650 feet south of the north line and 330 feet west of the east line of section 16 in the H.&T.C. Survey. Derrick is being built.

25 New Locations

There were 25 locations announced for the Texas Coast the past week, six of which were wildcats. Northwest of Houston on what is known as the Satsuma prospect, western Harris County, Amerada Petroleum Corp. and Stanolind Oil & Gas Co. have made tentative location for No. 1 Lewis Dopslauf. It is situated 1,287 feet south and 330 feet west from the northeast corner of the W.C.R.R. Survey, Block 1, section 2. This area has been checked several times with geophysical instruments and considerable acreage has been leased. One deep test has been drilled. Hill & Hill abandoned No. 1 Wharton the past year at 7,250 feet. East of Houston in the Penn City area, the same company is moving in material for No. 1 Nellie Esperson, located 4,312 feet north and 1,746 feet west of the southeast corner of a 208-acre tract on a 49.91-acre tract in the George Patrick Survey.

Northeast of the Hastings field in the Friendswood area, northern Brazoria County, Coastal Mineral Development Co. is moving in material for No. 1 Margaret Joslin, situated 330 feet south of the north line of Block C and 2,900 feet east of the west line of a 440-acre tract in the Sarah McKissick Survey. In Liberty County, and north of the Esperson dome, Crown Central Petroleum Co. is building derrick for No. 1 Davis, located 3,850 feet southwest of intersection of east line of survey with railroad, and 150 feet north at right angles in the David Kokernot Survey. The other two locations were semi-wildcats, being John Deering No. 1 Teel near the Saratoga dome in the Thomas Gaines Survey, and Resource Production Corp. No. 1 Howth, southwest of the Arriola field in the A. J. Cotton Survey. Both fields are located in Hardin County.

Production by Pools

Estimated daily average production of the larger pools of the Gulf Coast in the week ending March 19 was as follows:

TEXAS COAST

	Bbls.
Anahuac	5,939
Barbers Hill	16,557
Conroe	41,834
Hastings	5,612
High Island	6,958
Hull	5,593
Humble	3,497
Manvel	7,339
Mykawa	3,937
Pierce Junction	2,997
Sugarland	5,587
Thompson	10,807
Tomball	6,510
Dirks	3,587
Greta	16,137
Pettus	4,137
Plymouth	7,510
Refugio	4,438
Saxet	7,630
Saxet Heights	3,033
Tomoconnor	3,236
Miscellaneous	57,989
Total	230,864

LOUISIANA COAST

Black Bayou	3,125
Bosco	14,097
Bayou St. Dennis	3,735
Caillou Island	10,954
Cameron Meadows	5,913
Gillis	13,927
Lake Barre	9,639
Leesville	14,157
Tepetate	2,398
Roanoke	5,822
Sulphur	4,210
Miscellaneous	48,753
Total	136,730
Total Gulf Coast	367,594

Anahuac Defined on South

The southern limits of the Anahuac field, Chambers County, were defined by the abandonment of Humble Oil & Refining Co. No. 10 Broussard, which quit at 7,988 feet. Based on top of the Frio it is over 100 feet lower than wells to the north. An odor of gas from 7,075-83 feet was the only showing encountered. Location is in section 63, H.&T.C. Survey. Only two completions were reported for the field both being made by Humble Oil & Refining Co. No. 1 Wilcox, flowed 27 bbls. per hour through a quarter-inch choke from a depth of 7,085 feet

and No. 7 White made 28 bbls. per hour through a quarter-inch choke from a depth of 7,087 feet.

At the Turtle Bay field, Chambers County, Stanolind Oil & Gas Co., coring ahead in sandy shale at 7,039 feet on No. 1 State, after a drill stem test last week from 6,590-6,615 feet, showed several hundred feet of oil and 60 feet of salt water. It will be cored several feet deeper and will be plugged back to the above sand where it will be completed. In announcing location for No. 2 Middleton, the company has moved to the southeast about 1,000 feet from the discovery well. Location is 330 feet from the east line of the tract and 330 feet from the bay out of the southeast corner of the tract in the Moses A. Carrol Survey.

Dickinson Field

On the east side of the Dickinson field, Humble Oil & Refining Co. No. 1 Wilson cored broken sand and sandy shale with a gas and oil odor from 7,970-8,022 feet and is bottomed at 8,042 feet with 7-inch casing cemented at 8,031 feet. It is midway between No. 1 and No. 1-B San Leon farm in the A. E. Edwards Survey, Block 103. To the west along the Dickinson Bayou, Stanolind Oil & Gas Co. No. 3 State perforated casing from 7,997-8,024 feet and it flowed 134 bbls. in five and one-half hours. It is being flowed with gas. Humble Oil & Refining Co. made location for No. 2 Magle, 2,055 feet north and 458 feet west at right angles from the southeast corner of the J. S. Jones Survey.

On the west side of the South Houston field, Harris County, Smith & McDannald No. 1 Vallos, located in the Mary Nichols Survey, topped oil sand at 3,907 feet and is bottomed at 3,965 feet with 7-inch casing set at 3,897 feet. It is due west of Stanolind Oil & Gas Co. No. 1, District 22, and if productive it will extend production approximately 1,500 feet. To the north in the Callahan & Vince Survey, Stanolind Oil & Gas Co. is preparing to cement casing in No. 2 First National Bank after a 17-minute drill stem test from 4,710-4,811 feet, tested 20 stands of oil and 50 pounds of pressure through a quarter-inch choke. In the townsite area, the company's No. 1, District 46, is preparing to make a drill stem test at a total depth of 5,166 feet.

Louisiana Coast

Developments along the Louisiana Coast the past week were more or less routine. In the Cheneyville field, Rapides Parish, Amerada Petroleum Corp. No. 1 Beasley cored sand showing oil from 5,714-19 feet, the total depth, and is preparing to test, after 7-inch casing was cemented at 5,714 feet. It is located 1,400 feet west of the discovery well in section 52-1s-2e and is the third well to be completed.

Two completions were recorded for the Roanoke field, Jefferson Davis Parish. Humble Oil & Refining Co. No. 3-B Devilbiss was completed at a depth of 8,850 feet and flowed 747 bbls. per day through a quarter-inch choke. Location is in section 11-9s-4e. The same company's No. 2 Nelson H. Thomas topped oil sand at 8,671 feet and is bottomed at 8,694 feet with 7-inch casing cemented at 8,667 feet. Shell Petroleum Corp. No. 2 Carter, located in section 1, flowed 1,365 bbls. per day through a three-eighths inch choke from a total depth of 8,680 feet. Seven-inch casing was cemented at 8,667 feet. Locations were made for Humble Oil & Refining Co. No. 3 C N Taylor in section 12, and Shell Petroleum Corp. No. 5 Kratzer was located out on the northwest corner of section 12-9s-4w.

The Lafitte field, Jefferson Parish, was assured of two more deep wells, by the showing made by Texas Co. No. 3 Lafitte and No. 3 Rigolet. The latter test topped the shallow sand at 8,075 feet and was coring ahead in oil sand at 8,116 feet. This sand has been encountered in all wells drilled but has not been tested. It will be carried to the 9,500-foot sand before it is tested. No. 3 Lafitte cored oil sand from 9,407-9,417 feet and is preparing to test. The sand was encountered approximately 93 feet higher than the other wells which are producing from 9,500 to 9,600 feet. No. 3 Lafitte is located in section 19 and No. 3 Rigolet is in section 30.

Tepetate

Continental Oil Co. No. 1 Ardoin, located in section 28, Tepetate field, Acadia Parish, was completed and flowed 350 bbls. in 12 hours through a quarter-inch choke with tubing pressure 2,600 pounds and casing pressure 2,850 pounds. On the east side of the field, much attention is being centered on two outpost tests being drilled by Loffland Brothers No. 1-A L. C. Bowles in section 28 is drilling in sandy shale below 7,000 feet and No. 1-B L. C. Bowles is waiting on cement to set after plugging back to sidetrack at 6,450 feet, when the bit was lost in the hole at 7,419 feet. As no markers have been reported, it is impossible to determine how the wells are checking. On the extreme western side of the field, General Crude Oil Purchasing Co. has announced location for No. 1 Vincent estate, located 7,100 feet due west and 330 feet due south of the northeast corner of section 31-7s-2w. The location was made after the company had checked the area with geophysical instruments.

Approximately 6 miles northeast of the Tepetate field on what is known as the Elton or China prospect, Stanolind Oil & Gas Co. is reported to have paid $35,319 for a lease on 2,355 acres from the Calcasieu National Bank which completes a block of 8,300 acres that extends into Jefferson Davis Parish. The leases acquired are located in sections 19- 20, 21, 22, 26, 27, 28, 29, 30, 31, 32, 33 and 34 in Township 7s, Range 3w, and sections 4 and 5 in Township 8s, Range 3w. This area has been worked extensively with geophysical instruments, with the majority of the acreage being held by Skelly Oil Co., Gulf Oil Corp. and Stanolind Oil & Gas Co. It is reported that a location is to be made in section 27-7s-3w.

Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Mar. 23.—A long list of completions is recorded in Kentucky and in Central Ohio, where operations have recently been actively resumed after a long period of unusually bad weather.

In McLean County, Kentucky, Livermore district, Sunflower Oil & Gas Co. No. 2, on the Shockley Brothers farm, had an initial production of 110 bbls. after being shot. On the same farm, No. 3 was a dry hole. J. B. Mayer & Co. completed Nos. 2, 3 and 4 P. H. Morton. No. 2 was shot to an initial of 140 bbls., No. 3 had a production of 210 bbls. after being shot, and No. 4 was a dry hole. Walter Sargent & Co. No. 1 A. D. King had an initial production of 75 bbls. Ellis & Barrett No. 6 Howard was a duster. Ohio Oil Co. No. 7 G. B. McManama, Grindstone Hill, in McLean County, had an initial of 65 bbls. Hupp, Patton & Vickers No. 1, on their C. C. Crowe lease, had an initial of 600 bbls. after a shot. Bailey & Cox, in the same county and on the same farm, shot their No. 1 to an initial of 100 bbls. Felix Miles No. 1, on the Beard tract, near Livermore, in the same county, had a production of 85 bbls. the first 24 hours. On the Swanson tract, also outside of Livermore, Ky., in the same county, J. C. Miller No. 1 had an initial of 75 bbls. after being shot. Snyder & Clark No. 2, on their Stevenson heirs lease, in the same county, produced an initial of 50 bbls.

In Mulenburg County, near Greenville, Ky., on the R. O. Kennedy farm, Mayer Oil Co. No. 3 had a natural flow of 100 bbls. the first 24 hours.

Chatham Oil & Gas Co. No. 1, on their Paris Walker lease, outside of Niagara, Ky., in Henderson County, had a production of 15 bbls. after being shot. In the same county, near Niagara, Ky., Maddin & Richey No. 1, on the Jones property, was a dry hole.

Onsel Brothers & Co. No. 1 Sarage, 3 miles west of Bowling Green, Warren County, had a natural flow of 30 bbls. the first 24 hours.

In Ohio County, Maddox pool, Kentucky Natural Gas Co. No. 12 N. Rodgers & Co., had an initial of 50 bbls. after a shot, and Farrelson & Co. No. 1 Walter Stites was shot to 40 bbls. Stewart & Gealy No. 27, on the J. H. Roberts farm in Oak pool, same county, had an initial of 8 bbls. after being shot.

CENTRAL OHIO

In Lorain County, section 25, Avon Township, Schneider & Wyles No. 1 E. Williams was a commercial gas well. In Ridge Township, section 6, Dempsey & Cushing No. 1, on the Cleveland Stone Co. property, was a small commercial gas well, and Schnieder & Wyles No. 1 Featherstone was nearing the pay sand.

In Coshocton County, section 3, Newcastle Township, Preston Oil Co. No. 4 William Frazee made 120 bbls. the first 24 hours, after a shot. Murphy & Co. No. 2, section 15, Perry Township, on their Myers & Mossholder lease, was a gas well with a small showing of oil.

Wittmer Co. No. 1 C. T. Rohr, section 19, Jackson Township, Stark County, was drilled through the Clinton and abandoned as dry.

C. A. McMillan No. 1 on the Fuhrmeyer & Geisendorfer property, section 14, Independence Township, Cuyahoga County, is to be abandoned.

In Hardin County, section 17, Pleasant Township, Kenton Oil & Gas Co. No. 2 is moving a rig on the F. E. Hamilton farm, sections 19-20, same county, same township, Donnelson & Co. has a rig up on the F. and M. Jones farm.

Charleston Gas Co. has a rig up for its No. 1 on the Jacob Kepler property, in section 19, Ward Township, Hocking County.

In Seneca County, section 4, Hopewell Township, Harpster & Co. No. 1 is drilling on the M. Sendelback property.

Brown & Co. has a rig up on the Wannamaker farm in Blanchard Township, Putnam County.

In Wayne County section 31, Chester Township, Ohio Fuel Gas Co. No. 1 Eli S. Finley was a commercial gas well after a shot.

City Natural Gas Works, Mondhank & Bougher No. 2, section 1, Greenfield Township, Fairfield County, total depth 2,029 feet, was a gas well.

In Stark County, section 21, Sugar Creek Township, Ohio Fuel Gas Co. No. 1 on the B. F. Walter property, total depth of 4,140 feet, was dry. In total depth of 4,140 feet, was dry.

INDIANA FIELDS

One oil well, three dry holes and one gasser were completed in Indiana. In Vanderburgh County, section 30, Armstrong Township, L. R. Henley & Co. No. 2, on the Christ Ziss property, had an initial of 60 bbls. Petroleum Exploration Co. No. 1, on the Nick Gasser farm, section 24, Spencer Township, was a dry hole; total depth 566 feet. In section 11, Huff Township, F. E. Seitz No. 1 Ed Lorch is down 500 feet.

In Knox County, Busseron Township, section 11, Phillips Petroleum Co. No. 6, on the S. Bond farm, was a "duster."

In Pike County, section 18, Jefferson Township, on the Franklin Schrolucke property, Midwest Development Corp. No. 5 was a good gas well with a total depth of 718½ feet. In the same county, section 30, Washington Township, Dilley & Miller No. 2, on the Willard Morrison heirs farm, was dry. Section 19, Patoka Township, same county, Indiana Southwestern Gas Corp. No. 1 Turner Gross, is down 1,015 feet. In the same section, county and township, Reid, Parsons & Havens No. 1, on the Alice Robling & Co. property, is down 1,057 feet. Same county, Clay Township, section 32, Managers Discount Corp. No. 3, on the Jennie Cassidy farm, is down 1,516 feet.

Southwest Texas District

By
GEORGE WEBER

IMPORTANT POOLS EXTENDED AND BUSY LEASING CAMPAIGN

SAN ANTONIO, Tex., Mar. 23.—Indicated northward extension of nearly a mile to the Seven Sisters field in northern Duval County constituted an outstanding development of the week's drilling activity in Southwest Texas. Extensions to the Saxet and Samfordyce fields attracted attention to them also, and considerable leasing play in the Balcones Fault Line zone presaged increased drilling in that area in the near future. Although several wildcat tests failed during the week, wildcat activity improved. New locations increased decidedly in proven areas.

The success of Humble Oil & Refining Co. No. 2 Wright, located in the SW quarter of Survey 118, about 4,500 feet from production in the Seven Sisters field, attracts operators to the possibilities for northward extension of the field. The Humble test drilled two locations west of the No. 1 Wright, which was abandoned last month at 2,735 feet, total depth, topped oil sand at 2,530 feet. At the latest report the well was flowing by heads and was being swabbed with fluid standing within 300 feet of the surface. Dry holes on the northern edge of production in this field had slackened exploration in that direction in favor of the western and southern directions in which the field has not yet been defined. On the extreme western part of the field, tests continue to find production in the Government Wells sand, and in the southern portion twin wells are being drilled with production coming from the Government Wells and the Chernosky sands. Blanco Oil Co. and Buchanan and Atlantic Oil Producing Co. are active in drilling twin wells on their leases in Surveys 385 and 391. Offset drilling is going on in many parts of the field. Six producers were added to the field as a result of the week's drilling, three each being completed in the Government Wells and Chernosky sands. The Chernosky producers are located in the east and northeast sections where operators have the best success with completions in the shallower sand. Most active outpost drilling at present is on the southwest.

Loma Novia

Loma Novia saw its quota of completions as 12 wells were brought into production with initial production gauges ranging up to 26 bbls. per hour. Activity in this field is mainly concentrated in drilling up proven acreage. More than 20 new locations were staked in the past week, indicating a gain in operations in this most active field in Southwest Texas.

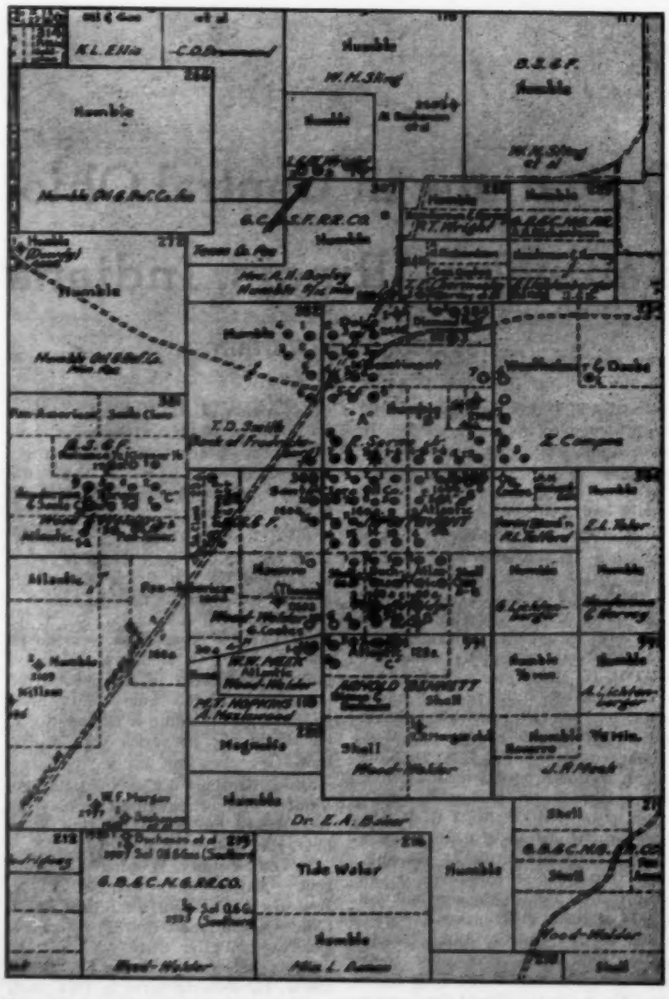
The Hoffman field outlook dimmed further with another failure. Porter & Stevens No. 1 Sutherland was abandoned dry at 3,002 feet, the second failure in two weeks in this field. The dry holes have been drilled on the northwest of the production, between the small field and Loma Novia. Of the active tests in this area, two are on the sand, the Plymouth Oil Co. No. 1 Cuellar testing at 2,874-85 feet, and the Rogers & Rogers No. 2 Hoffman at 2,903 feet.

Two wildcat tests were abandoned in Duval County during the week, but four new locations more than offset the failures. Among these is Stanolind Oil & Gas Co. No. 2 Farmers Life Insurance Co., located in the SE cor. of Survey 559, 2 miles southwest of the Labbe field, that company's last operations in the county. The test is also about 2 miles east of the southernmost production in the Seven Sisters field. Other wildcat tests are being started by Magnolia Petroleum Co. and Kepley Production Co. Abandonments were on the Book Ranch in southeastern Duval County, and Charles Daubert No. 1 Kreis, 5½ miles east of Loma Novia.

Lopez Field

Three completions in the Lopez field and two in the O'Hern field summed up operations in the major pools of Webb County for the week. Wildcatting in this county is quiet at present with only one test drilling. The Southwest Drilling Co. No. 1 Lopez, located 8 miles south of the Lopez field, was abandoned at 3,750 feet. The test encountered a show of oil in the Mirando sand, but failed to get a test.

The Lower Rio Grande Valley has several rigs active in both proven and wildcat areas. High spot of the week in that section is the starting of a new deep test in Willacy County. The Shell Petroleum Corp. has a derrick built and is completing a concrete cellar for a 9,200-foot test to be spudded in immediately. The test, which will be known as the No. 1 Yturria Land & Livestock Co., is located in the salt lake district of northwestern Willacy. It will be the deepest test to be drilled in the Valley unless production is encountered at a lesser depth. Of the active wildcats, the Quintana Petroleum Co. No. 1 John Engleman in the Mestanas area of Hidalgo County was attracting most attention. The test has cored continuously from 3,500 feet to its present depth of 5,455 feet where it is in shale.



The Seven Sisters field in northern Duval County. Arrow indicates Humble No. 2 Wright, which is flowing by heads at a total depth of 2,530 feet. It constitutes a northward extension of 4,500 feet to the field

(Map by W. R. Walker, San Antonio, Tex.)

Samfordyce Extended

The Samfordyce field was extended 1,500 feet westward during the week by the completion of Sun Oil Co. No. 1 Chapotala, which came in for 9 bbls. per hour on a quarter-inch choke. It was that company's first operation in the field which now totals 132 producers. In the northern section of the field, Weekly Oil Co. No. 1-C Guerra was completed as a gasser.

Small Discoveries

Two wildcats were brought in for small discoveries during the week in Brooks and Medina Counties. The Brooks County test, Dick Young No. 1 Singer, was completed in sand at 915-18 feet, making approximately 40 bbls. per day. The field has been named the Alta Verde. In Medina County another shallow producer, A. A. Murrell No. 1 fee, is going on the pump making a small amount of 20-gravity oil.

Leasing in the Fault Line zone is reported heavy, with Frio, Medina and Atascosa Counties the center of the activity. Operations in LaSalle County, south of Frio County, are reaching the stage of drilling tests, with several to be commenced in the near future. Zavalla County tests are lagging, as no activity is yet reported from that district.

Two wildcat failures occurred in McMullen County, but a Live Oak County test, Dirks Brothers No. 1 Dougherty had a show of oil in sand at 4,508-16 feet. The test was carried to a sand at 4,656-62 feet, where it was testing at the latest report.

Corpus Christi

The drilling boom in the Saxet Heights or Corpus Christi field supported by field and wildcat operations in Nueces and San Patricio Counties gives the lower Coastal region the most concentrated play in that section of the state. Drilling time in the Saxet Heights field is very short, and with continuous staking of new locations and lease trading, de-

(Continued on Page 92)

California Field Report

By
L. P. STOCKMAN

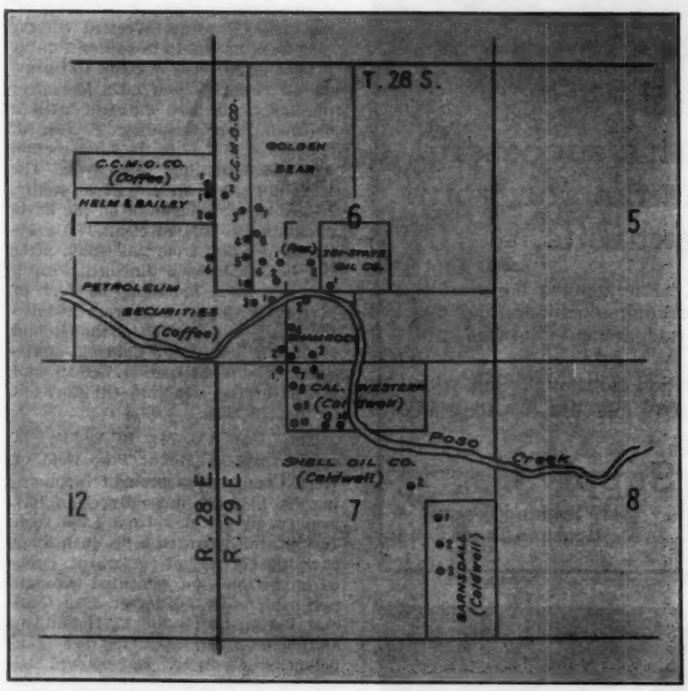
PRODUCTION MAY YET FALL TO 537,000 BBLS. PER DAY

LOS ANGELES, Calif., Mar. 23.—Although state production has not yet been reduced to the prescribed allowable of 537,000 bbls. per day, considerable progress has been made since the new curtailment program became effective. There are still a few rough spots to be ironed out and crude oil purchasing companies are hopeful that the apparently insurmountable obstacles will be removed in the near future. In contrast with the centralized method of administration and use of complicated formulas employed to effect curtailment during existence of the petroleum code, proration activities at the present time have been simplified and are worked out by operators in each field. Several fields are considering the advisability of reducing production by declaring a production holiday of sufficient duration to effect the necessary curtailment. This method of reducing production is especially adaptable in settled fields where pumping wells are the rule rather than the exception.

Operators in the Kern Front section of the Kern River field, where considerable difficulty has been experienced in securing compliance with the existing curtailment program have decided to adopt the production holiday, during which all production activities will be suspended. Operators in the Coalinga, Elk Hills, Mount Poso, Round Mountain, Coffee Canyon and Lost Hills fields will consider the advisability of adopting the production holiday in the near future. At a meeting held by operators in the Kern Front section of the Kern River field a few days ago, it was decided that "curtailment of production at Kern Front for April and succeeding months be by the declaration of a production holiday, during which period all wells in the field would be shut in. Beginning April 1 all operators may produce without restriction and as they desire until a date later in the month to be specified by the oil umpire, who will notify operators about the middle of the month as to the extent and duration of the holiday. All wells will be shut down completely for the remainder of the month when the holiday is declared and the shutdown will result in effecting the necessary curtailment of the field for that month. New wells will be allowed a period of 10 days of uncurtailed production."

Kettleman Area Reduced

Proved acreage in the Kettleman North Dome field was set a few days ago by the engineering committee as 16,180 acres and this estimate was approved by directors of the Kettleman North Dome Association. Last year the engineering committee estimated the probable productive area as 16,670 acres. These totals include acreage held by Kettleman North Santa Clara Oil Co. No. 1 Glasscock Dome Association (Kenda), Standard Oil and other companies holding productive leases in the field. The twilight zone heretofore classified as potentially productive acreage which might subsequently be found productive has been eliminated. Until the current year, acreage in the twilight zone participated in the income of the Kettleman North Dome Association to the extent of 25 per cent. Proven acreage of the Kettleman North Dome Association, as a result of the new survey, has been reduced from 8,330 acres, considered proven last year, to 8,050 acres. The new engineering report pulls in the productive limits in the southeastern end of the field and cuts a little off the east and west flanks. The productive limits were expanded in the northwestern or Huffman area, where several wells were completed within the past year between the blue and red lines. Due to several important developments and pending the outcome of drilling operations on two wells, Kenda directors postponed final action on productive limits until March 30.



Coffee Canyon section of the Round Mountain field in Kern County

Drilling operations in California for the first two months of the current year are considerably lower than the average for the 12 months of 1935, but operators in proven fields and prospectors may make up for lost time before the current year draws to a close. The number of new wells completed during January and February were approximately equal to the 12 months average established during 1935, but the number of strings of tools in operation is somewhat lower than the 1935 average. The monthly average of drilling operations reported during 1935 reflects the completion and drilling of a number of gas wells in the Semi-Tropic and Delano gas fields. Development work has been completed in these two fields and consequently the present average is somewhat lower than anticipated. The umpire's staff, in a recent survey, reveals the fact that there are 525 flowing wells in California at the present time and 313 wells producing on gas lift. There were 11,187 wells pumping at the time of the survey. It is interesting to note that there are 113 wells producing under a natural flow in the Ventura Avenue field and that at the present time there is only one flowing well in the Long Beach field. The Kettleman North Dome field has 85 flowing wells, 38 producing on gas lift and no pumpers. The Dominguez field of Los Angeles Basin, which has a number of wells producing on the beam from the upper zones, has 67 flowing wells and 24 producing on gas lift. There are 14 flowing wells and 10 gas lift wells in the Playa Del Rey field, and 92 flowing wells and six producing on gas lift in the Mountain View field. The North Belridge field has 23 flowing wells, and the Inglewood field 20 flowing wells and three producing on gas lift. The recapitulation shows a total of 254 flowing wells in the San Joaquin Basin, 132 in the coastal region and 139 flowing wells in Los Angeles Basin. The San Joaquin Valley has 45 wells producing on gas lift as compared with 53 in the coastal region and 215 in Los Angeles Basin.

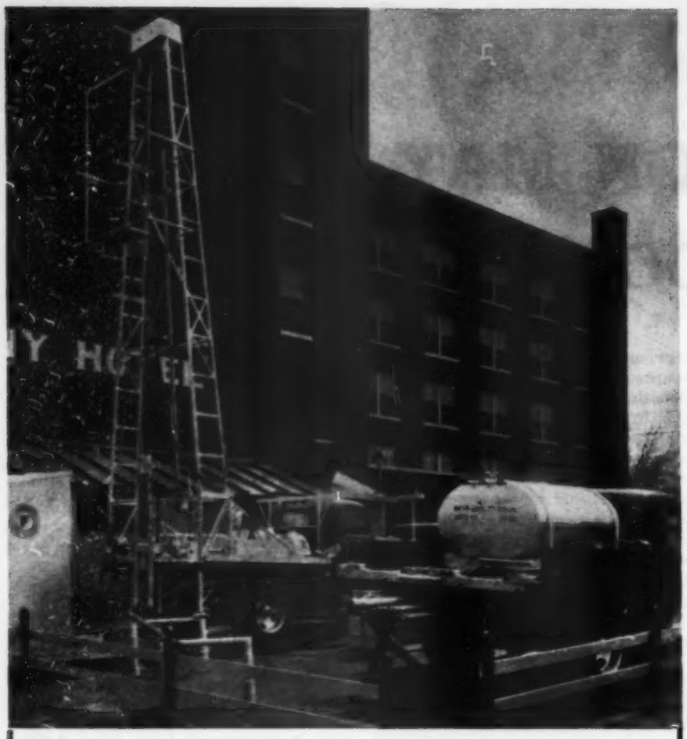
Numerous Completions

Wells were completed in 15 different fields in the past week. Shell Oil Co. added one in the Mountain View field of Kern County when No. 5 on Porter lease No. 2 in section 32-30-29 was brought in flowing 1,480 bbls. of relatively clean 29.2 gravity oil per day from 6,038 feet, after the hole had been plugged back from 6,050 feet. Completion of this well practically proves up Nos. 7, 8 and 9 on the same property. The Sheldon Oil Corp. completed No. 1 Ross in section 19-30-29 but the initial daily production, 160 bbls. per day from 5,150 feet, was somewhat of a disappointment. Several wells are being started in the Mountain View field and two of them should begin making hole within the next week.

The Western Gulf Oil Co. narrowly averted having a wild well on its hands in the Fruitvale field of Kern County when No. 18-V on the Kern County Land Co. property, in section 22-29-27, blew in doing 6,840,000 feet of gas while the crew was drilling out cement on the 6⅝-inch water string, which had been landed and cemented at 3,566 feet. After being brought under control, the well was shut in and the gauge showed a gas pressure of 760 pounds. No oil accompanied the gas, which an analysis showed consisted of CH^4, 85 per cent; CO^2, 15 per cent, and B.t.u., 860. The Dixie Lee Oil Co. No. 2 Seahawk, in section 23-29-27 in the Fruitvale field of Kern County, was brought in flowing 144 bbls. of clean 21.9 gravity oil per day during the early part of the week following completion at 3,772 feet. This new well, which is flowing under a casing pressure of 360 pounds, was finished with a 6⅝-inch liner including 165 feet of perforated and which was cemented through perforations at 3,604 feet. The Texas Co. failed to secure commercial production in its first well in the Fruitvale field and this project, No. 1 K.C.L. in section 26-29-27, was abandoned at 4,659 feet in a gray sand. The top of the Santa Margarita was logged at 4,510 feet.

Round Mountain

The Barnsdall Oil Co. completed its third commercial producer on the Caldwell lease in the Round Mountain field of Kern County when No. 3 in section 7-28-29 was brought in flowing 280 bbls. of clean 18.1 gravity oil per day from 1,950 feet. This new well was finished with an 8⅝-



View of Exhibit at Tulsa A. A. P. G. Meeting

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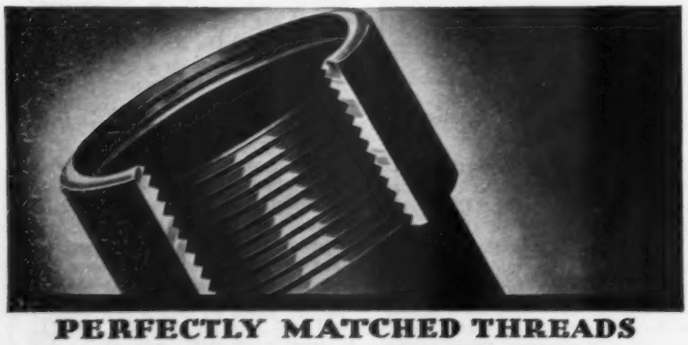

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TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	March 8		March 1			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	77,391	527,098
Gasoline	311,209	44,458	193,493	27,642	1,142,622	1,313,077
Kerosene	.....	.....	.....	.....	386,956	226,246
Foreign exports:						
Crude oil	203,574	29,082	269,285	38,469	1,636,860	1,838,530
Fuel oil	105,618	15,088	118,309	16,901	1,959,088	2,596,778
Diesel and gas oil	173,538	24,791	79,385	11,341	701,322	570,185
Gasoline	.....	.....	87,664	12,523	1,067,561	827,122
Kerosene	.....	.....	.....	.....	77,453	214,801
Other unfinished oil	3,019	431	.....	.....	6,439	37,097
Coastwise-domestic:						
Crude oil	157,780	22,540	156,070	22,296	1,110,630	1,424,652
Fuel oil	182,971	26,139	336,385	48,052	1,867,258	2,128,672
Diesel and gas oil	12,571	1,796	95,634	13,662	369,417	211,867
Gasoline	369,882	52,840	128,443	18,349	2,512,209	1,729,753
Kerosene	3,017	431	4,489	641	62,895	34,598

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	.....	157,258
Kerosene	.....	.....	.....	.....	.....	149,715
Asphalt	.....	.....	.....	.....	.....	71,325
Lubricants	.....	.....	.....	.....	1,779	12,381
Foreign exports:						
Crude oil	9,150	1,307	201,336	28,762	482,936	533,081
Fuel oil	136,753	19,536	209,948	29,993	660,402	335,798
Diesel and gas oil	.....	.....	.....	.....	100,856	125,612
Gasoline	.....	.....	85,009	12,144	717,192	627,812
Kerosene	.....	.....	.....	.....	163,009	121,016
Lubricants	.....	.....	.....	.....	43,008	44,246
Coastwise-domestic:						
Fuel oil	236,104	33,729	83,181	11,883	1,447,240	747,591
Diesel and gas oil	.....	.....	.....	.....	76,898	79,662
Gasoline	48,690	6,956	78,262	11,180	819,175	772,672
Kerosene	.....	.....	4,656	669	24,588	10,149

inch water string landed and cemented at 1,907 feet and a 6⅝-inch liner carrying 43 feet of perforated. The crew from this well has been transferred to No. 4 Caldwell and preparations started to begin immediate drilling. The California Western Oil Co. completed its No. 16 in section 7-28-29. It pumped 197 bbls. of clean 16.1 gravity oil per day from 1,578 feet after the hole had been finished with a 6⅝-inch liner including 41 feet of perforated. No. 17 in the same section will start drilling this week. The Honolulu Oil Corp. No. 92 in section 18-28-29 was brought in on the beam pumping 248 bbls. of clean 17.5 gravity oil per day from 2,100 feet, after the hole had been finished with a 6⅝-inch liner including 60 feet of perforated. Two wells are scheduled for early completion in the Round Mountain field, No. 3 Caldwell of the Shell Oil Co. in section 7-28-29 and No. 91 of the Honolulu Oil Corp. in section 18-28-29.

The Texas Co. No. 10 Vedder, in section 4-27-28, Mount Poso field of Kern County, was brought in pumping 406 bbls. of unusually clean 16.7 gravity oil per day from 1,759 feet. It was finished with a 6⅝-inch liner carrying 177 feet of perforated, landed on bottom and cemented through perforations at 1,652 feet. The General Petroleum on No. 17 Heisen, in section 16-27-28, at 1,813 feet is a potential producer, and should be tanking oil within the next 24 hours. The Baker-Grover Oil Co., of which Cliff Baker is president, is rigging up rotary drilling equipment preparatory to spudding in No. 4 Glide, in section 33-27-28, on which property the company has already finished three commercial producers. Out on the west front of the Kern River field, the Chanslor Canfield Midway Oil Co. completed No. 56, in section 23-28-27, and this new well was brought in pumping 146 bbls. of 15.9 gravity oil daily from 2,150 feet. This new producer was finished with an 8⅝-inch liner, which was landed at 2,099 feet and cemented through perforations at 1,890 feet. This liner was perforated at 1,785-1,864 feet, 1,894-2,010 feet and at 2,056-99 feet. In addition to completing this new well, the Chanslor Canfield Midway Oil Co. spudded in No. 58 in the same section and started rig construction for No. 59. The Republic Petroleum Co., which has finished seven commercial producers on the Strassburger lease, in section 24-28-27, and has a new rig in course of construction, is starting actual development of the Fleishacker lease, in section 11-28-27. The rig for No. 1 Fleishacker, now under construction, is located 200 feet north and 200 feet west from the center of the section. The General Petroleum Corp. is rigging up rotary drilling equipment on No. 5 Young, which will be drilled in section 14-28-27, and spud is expected to be made within the next few days. The Texas Co. will have a new producing well out on the west front of the Kern River field before the close of another week as drilling operations have been completed on No. 14 Lehman at 1,857 feet and a water string landed and cemented.

Premier

The Ausbrit Oil Corp. is working on an interesting outpost in the Premier district of Kern County along a fault and under somewhat similar structural conditions to those existing in the Coffee Canyon and Round Mountain fields. The Ausbrit Oil Corp. No. 1 is in section 20-27-27 and approximately 50 feet of oil sand has been encountered above the bottom of the hole, which is at 2,139 feet. The Standard Oil Co. finished a well in the Premier field, No. 9 on fee-owned acreage in section 5-28-27. It was brought in pumping 71 bbls. of 15.2 gravity oil per day from 2,750 feet, after the hole had been plugged back from 2,835 feet. The well was finished with an 8⅝-inch liner carrying 150 feet of perforated. Standard concluded drilling operations on No. 10 fee and should have this new well ready for a production test within the next few days. Two new wells are being started in the Premier district, Associated Oil Co. No. 1 Skinner in section 4-28-26 and the Poso Petroleum Co. No. 1 in section 2-27-27. They should be spudded in shortly.

Two new wells were put on production in the Midway-Sunset field of Kern County. Standard Oil Co. No. 218-33-D, in section 33-32-24, was bottomed at 3,032 feet and finished with a 7-inch liner carrying 209 feet of perforated. It was brought in pumping 487 bbls. of unusually clean 23.3 gravity oil per day. The Chief Oil Co. No. 1, in section 6-11-23, was finished on the beam pumping 15 bbls. of 24.8 gravity oil, cut approximately 50 per cent. This well was carried down to 4,468 feet, then plugged back to 3,120 feet and the 7-inch casing

perforated at 2,720-34 feet. General Petroleum is completing preparations to drill three new wells in the Midway-Sunset field, but the work may be spread out over a period of several months. No. 61 Balboa has been standing rigged up for some time and a rig was recently completed for No. 143 Moco. Recent activity in the vicinity of section 6-11-23, especially by the Gibson Oil Co., which has completed two excellent wells within the past few months, has apparently changed plans of the General Petroleum because this company, instead of spudding in No. 61 Balboa, has started rig construction for No. 1 Main Line, located in section 6-11-23.

Delano Gas Field

The Standard Oil Co. completed No. 1 Tulare Farms in section 34-24-23, Delano gas field, in Tulare County, registered an initial production of 400,000 feet of dry gas from 2,450 feet after the hole had been plugged back from 3,308 feet and finished with a 6⅝-inch liner including 32 feet of perforated. This is the smallest well finished in the Delano gas field. It is standing shut in under a pressure of 1,050 pounds on the 2½-inch tubing and 1,000 pounds on the casing and consequently might show substantially higher production on a conclusive test. The Amerada Petroleum Corp. is expected to complete No. 5 F.D.L. in the Tracy gas field within the next few days as drilling operations were recently completed at 4,351 feet. Articles of incorporation are expected to be filed in Sacramento shortly for a new company to be organized by a number of Oakland business men for the purpose of developing approximately 40 acres located in close proximity to holdings of the Amerada Petroleum Corp. in the Tracy gas field of San Joaquin County.

The Union Oil Co. made a formation test on No. 1 Giannini, in the Tulare Lake district of Kings County. It showed a steady blow of dry gas for approximately 30 minutes. In addition to the gas, the company recovered 175 feet of mud and water and approximately 3,000 feet of salt water heavily impregnated with gas. The packer on the formation tester was set at 3,555 feet. The Seaboard Oil Co. abandoned at 3,243 feet its No. 1 Welsh in section 30-16-14, which was started for the primary purpose of ascertaining the possibility of developing commercial gas production. It failed to show any favorable indications. The Shell Oil Co. was still swabbing No. 1 Branch at last reports and this wildcat, located in Monterey County, in section 34-24-10, has failed to come up to expectations following the showing found above bottom at 7,332 feet and which resulted in the landing and cementing of 7,250 feet of 7-inch casing. The Seaboard Oil Co. is building rig for a new wildcat to be drilled in Fresno County in section 10-16-13 and spud is expected to be made within the next few days. The Standard Oil Co. has started rig construction for a new well to be drilled in the South Coalinga field, in section 36-21-14.

Elwood

Two wells were returned to production in the Elwood field of Santa Barbara County after being redrilled and deepened from the Vaqueros to the Sespe and both of them registered satisfactory production. The Bankline Oil Co. recompleted No. 4 on tideland permit No. 80, and this well was returned to production flowing 415 bbls. of clean 36.1 gravity oil and 960,000 feet of gas per day. The Bankline's rejuvenated well, which picked up top of the Sespe at 3,450 feet and finished at 3,578 feet, has a 10¾-inch string landed and cemented at 3,085 feet. Below the 10¾-inch casing, the company ran in an 8⅝-inch blank liner and cemented it at 3,448 feet. The hole was finished in the Sespe with a 5¾-inch liner carrying 130 feet of perforated. The Barnsdall and Rio Grande, which are jointly developing several properties in the Elwood field, completed No. 16 Luton Bell during the early part of the current week after redrilling and deepening the hole from the Vaqueros to the Sespe. This well was returned to production flowing 796 bbls. of exceptionally clean 36.1 gravity oil and 1,532,000 feet of gas per day through a 1-inch bean following completion at 3,534 feet. No. 16 Luton Bell was finished with a 4¾-inch liner including 100 feet of perforated and 3,363 feet of 2½-inch tubing.

In the Playa Del Rey field of Los Angeles Basin, the Union Oil Co. completed No. 15 Vidor, pumping 160 bbls. of 22.1 gravity oil per day from 6,188 feet and the production is holding up in good shape. The Herndon Development Co. has started swabbing for production following completion of its No. 29-2 and if it responds to this artificial stimulation, it should be tanking oil within the next day or so. The Ohio Oil Co. has picked up the nodular shale in its No. 18 Recreation Gun Club and the logging of this marker tends to indicate a strong possibility that this well will result in commercial production. If so, it will extend the proven limits of the field approximately 1,500 feet northeast of No. 16 Recreation Gun Club, which is the most northerly producer on this property. These wells are located out on the north flank of the structure and with the nodular shale correlating rather uniformly there is every reason to expect the presence of the usual productive conglomerate below the nodular shale and resting directly on top of the basement Schist.

Dominguez

The Shell Oil Co. added a well to its list of producers in the Dominguez field of Los Angeles Basin when No. 69 Reyes was brought in flowing 730 bbls. of clean 32.5 gravity oil and 390,000 feet of gas per day from the upper Callender zone following completion at 4,500 feet. It was finished with a 5¾-inch liner carrying perforations at 4,243-4,407 feet and at 4,438-97 feet. In the Inglewood field of Los Angeles Basin, the Standard Oil Co. completed No. 35 on Vickers lease No. 1 after plugging back from 3,150 feet to 3,033 feet. This new producer did not equal previous completions on the same property as the initial daily production, 470 bbls. of 22.1 gravity oil, registered a cut of 31 per cent. If the production of this well fails to clean up, the company will undoubtedly test the effectiveness of the plug in the bottom of the hole and undertake remedial work if the plug is defective. The Standard completed No. 60 Emery in the West Coyote field of Los Angeles Basin. It flowed 502 bbls. of 27.9 gravity oil and 180,000 feet of gas per day from 5,773 feet after the hole had been plugged back from 6,005 feet and finished with a 6⅝-inch liner including 545 feet of perforated. The company is drilling No. 61 on the Emery lease

(Continued on Page 91)

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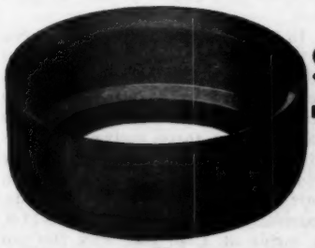

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RODESSA'S 111 OIL WELLS ARE KEEPING WITHIN ALLOWABLE

By J. R. CRUMPTON

SHREVEPORT, La., Mar. 23.—The hot wildcats in the North Louisiana and South Arkansas districts continued coring for the pay horizon during the past week, but none of them were on test that either condemns them as future producers or checks them out of the potential producing list. A test in Bienville Parish, southwest of the Lincoln Parish recently discovered Glen Rose gas area, is holding the center of interest at this writing, having already cored a likely looking gas sand but passing it up for deeper drilling with the expectation of contacting an oil sand farther into the Trinity series. The Rodessa field had a fairly good week with six good producers and as many more having contacted the pay zone and in the process of washing in.

No Hot Oil

The so-called hot oil scare in the Rodessa field, which seemed to be causing more worry from outside sources, not directly concerned with production in that area, than of the actual operators in the field, has been proven to be no source of worry whatever. Gov. James A. Noe of Louisiana, in cooperation with the Minerals Division of the State Conservation Department, has been checking the field for the past three weeks and reports that no hot oil is leaving that area. In fact, with the 111 wells completed at this writing with a total allowable of 44,400 bbls. per day, or 400 bbls. per well, the daily average runs from all wells in the field will average under 40,000 bbls. per day. A check on the daily runs from the pipe lines serving the field will verify this and the small amount of local truck movements of oil to small refineries have been stopped by the agents of the State Conservation Department.

Operators in the Rodessa field are cooperating to the fullest extent with the authorities in keeping the daily allowable within the limits prescribed and feel that there is no reason to be concerned about an excessive amount of oil being run from this field. In fact, all of the operators are well satisfied with the system of fixing the allowable from Rodessa since shortly after its discovery last July, and feel that the district of North Louisiana will eventually reach the daily allowable to which it is justly entitled, around 200,000 bbls. daily, as the field gradually develops. Before discovery of oil in Rodessa, 14 fields in the North Louisiana district produced only an average of around 24,000 bbls. daily.

Bienville Parish

Lide-Greer & Marr No. 1 Davis Brothers Lumber Co., section 12-16-5w, Bienville Parish, will know during the week whether an oil well may be completed before reaching the contract depth of 6,100 feet or whether to plug back into the upper part of Oolitic lime in the Glen Rose and test a likely looking gas stratum contacted. The test is reported to have cored top of the Hill sand, first gas-producing horizon in the Rodessa field, at 5,868 feet. Base of massive anhydrites was logged at 5,606 feet. The test is coring at 6,019 feet.

Another test that is being closely watched, United Gas Public Service Co. No. 2 Durrett, section 31-20-5, Sugar Creek field in Claiborne Parish, is arranging to set casing to test a show of oil and gas contacted around the 5,665-foot level. Drill stem has been stuck in this well for several weeks at this depth. The Oolitic lime producing gas in this field has been contacted around 4,350 feet. About 15 miles north and east of this area, W. C. Glothlin and others No. 1 Brinker, section 10-23-4w, topped red beds at 3,230 feet, cored anhydrites from 3,530-26 feet and is drilling ahead at 3,807 feet.

Other Louisiana Wildcats

Caddo Parish, Blanchard area, Pyramid Oil & Gas Co. No. 1-A S. R. Wheeler, section 16-18-16, drilling 3,665 feet; De Soto Parish, J. K. Wadley and others No. 2 Logan Oil Co., section 16-10-12, tested small show of oil and arranging to deepen from 3,184 feet. A new location in Franklin Parish, S. C. Jenson No. 1 Bailey, section 12-11-6e, is rigging up. Two shallow tests in Jackson Parish, George W. Zeigan No. 4 Louisiana Central Lumber Co., section 25-14-2w, stands temporarily abandoned at 1,781 feet, and his No. 5 in section 13-14-2w is abandoned temporarily at 1,770 feet. A few miles northeast of the town of Ruston in Lincoln Parish, Arkansas-Louisiana Gas Co. No. 1 C. E. Causey, section 32-19-2w, topped Cane River at 737 feet, Wilcox at 1,073 feet and is drilling at 2,331 feet.

In Sabine Parish, A. H. Tarver No. 2 Baker, section 36-8-12, is drilling at 4,500 feet. Webster Parish, which is the mecca for geophysical crews and the subsequent block following the surveys, has three active rigs running. A shallow test in the Yellow Pine vicinity in the southwestern part of the parish, J. L. Edwards, trustee, No. 1 Hooper, section 8-17-9, is coring at 1,740 feet with the top of Nacatoch reported at 1,492 feet. A few miles east of this test, a proposed deep well, J. P. Evans No. 1 T. Crichton, section 35-18-9, topped Arkadelphia at 1,830 feet, logged base of chalk rock at 2,169 feet, top of Blossom at 2,436 feet and is drilling in shale at 3,527 feet. In the Cotton Valley field, Ohio Oil Co. No. 1 R. L. Holloway, section 23-21-10, is coring at 6,590 feet. This well is expecting to contact an oil-bearing sand slightly below the 7,000-foot level, but will drill to total depth of 10,000 feet unless a good pay zone is encountered.

Rodessa Field

Six completions of good wells were reported from the Rodessa field during the past week and in addition the Converse field of Sabine parish furnished two good new producers. The Monroe gas field reported two average gas wells and one dry hole in Caddo Parish made up the list of 11 completions in this district.

Following are Rodessa completions: Haynes Production Co. No. 3 Tyson, section 14-23-16, 65 bbls. per hour through 1¾-inch choke from 6,040 feet, top of saturated lime logged at 6,020 feet. J. Edward Jones No. 1 Neugent, section 23-23-16, in the Rodessa townsite, flowed 200 bbls. of 62 gravity distillate per day through five-sixteenths inch tubing choke with a tubing pressure of 1,750 pounds and casing pressure of 2,100 pounds. The well is also making about 10,000,000 feet of gas from plugged back depth of 6,005 feet from old total depth of 6,010 feet. R. W. Norton No. 3 Tyson heirs, section 13-23-16, on the northeastern trend from the hot spot of production, is making 16 bbls. per hour on three-thirty-seconds inch tubing choke from total depth of 6,065 feet. Tubing pressure registers 1,550 pounds and casing pressure 2,000 pounds. Top of saturation was logged at 6,020 feet. United Gas Public Service Co. turned in three completions. Its No. 2 V. I. Miller, section 14-23-16, gauged 27 bbls. per hour from 6,025 feet. Number 1 N. S. Spearman unit, section 18-23-15, is a 66-bbl. per hour producer from 6,035 feet, and No. 7 Tyson heirs, section 11-23-16, is making 35 bbls. per hour from total depth of 6,049 feet.

The Converse shallow chalk rock field, Sabine Parish, reported two producers, J. E. Doughtie No. 2 Edwards, section 29-9-13, is flowing 255 bbls. per day through three-eighths inch tubing from 1,626 feet. Lee Whitehurst No. 1 Cassell, section 30-9-13, used acid at 1,710 feet after setting 7-inch casing at 1,570 feet and the well was completed pumping 120 bbls. daily from total depth of 2,100 feet.

The Morehouse and Ouachita Parish areas of the old Monroe field furnished two small gassers. In the former, Grecian Bend Oil Co. No. 1 Sandidge, section 2-20-4e, gauged 2,000,000 feet of dry gas with 610 pounds rock pressure from 2,197 feet, and in Ouachita Parish, United Gas Public Service Co. No. 86 fee, section 31-19-4e, gauged 2,000,000 feet daily flow with 815 pounds rock pressure from 2,187 feet. J. Ed Bailey No. 1 Hatrzo, section 28-22-16, Caddo Parish, was abandoned as dry at 2,136 feet.

Production by Pools

Estimated daily gross production per pool in the week ending March 21, was as follows:

NORTH LOUISIANA

	Bbls.
Bellevue	445
Caddo, light	4,245
Caddo, heavy	2,465
Converse	1,275
Cotton Valley	360
DeSoto and Red River	1,330
Elm Grove	420
Haynesville	3,360
Holly	150
Homer	2,585
Pleasant Hill	160
Rodessa	43,875
Sarepta-Carterville	500
Urania	2,625
Zwolle	1,255
Total	65,050

SOUTH ARKANSAS

Champagnolle	3,445
El Dorado	2,110
Lisbon	290
Miller County	985
Nevada	805
Smackover, light	2,085
Smackover, heavy	17,365
Stephens	560
Urbana	2,060
Total	29,705

ARKANSAS

A limited number of wildcats located in widely separated areas are being closely watched in this district. Seaboard Oil Co. No. 2 fee, section 28-17-4, Ashley County, in the southeastern part of the state, tested salt water at 2,318 feet and is coring in hard granite at 2,494 feet. M. D. K. Fitzwater No. 2 Lafferty, formerly reported as F. W. Martin, section 17-14-24, Hempstead County, is arranging to set a string of 7-inch casing to test a show encountered from 1,980-86 feet.

Lafayette County continues active in wildcatting. Erwin & Leach No. 3 Bodcaw Lumber Co., section 20-16-23, is drilling in lime at 4,390 feet. Earl F. Fox No. 2 Coleman Brothers, section 30-16-24, a few miles southwest, stands temporarily abandoned at 3,760 feet but a larger rig may be moved onto the location to deepen. Southeast of the old Bradley field, Joe Modisette No. 1 Red River Lumber Co., section 21-19-24, is drilling at 3,580 feet. Transportation Petroleum Co. No. 1 Cockran, section 26-19-25, tested salt water and is shut down at 3,675 feet.

About 8 miles south of the Miller County field, Odell Hinson No. 1 Montana Realty Co., section 3-17-28, has set 12½-inch surface casing at 238 feet and drilling plug to resume. Phillips Petroleum Co. No. 1 J. D. Reynolds, section 27-15-15, on the northeast flank of the Smackover field, is drilling at 4,408 feet. The active tests in Union County are all located in the Rainbow area.

Only one completion was recorded in the Arkansas district, W. B. Stree,

(Continued on Page 90)

Rocky Mountain Area

By
T. R. INGRAM

POOL OPENED IN COLORADO; BIG WELL IN MEDICINE BOW

DENVER, Colo., Mar. 23.—The Rocky Mountain area had more than the usual number of important developments. In Colorado the William E. Hughes Estate brought in its No. 5 Gramps, in the Price district in Archuleta County in the Dakota at 1,100 feet for an estimated production of 1,800 to 2,200 bbls. daily, making that pool probably a major development. In Wyoming, the Kinney-Coastal Oil Co. No. 3 Government, which discovered oil on the flank of the Garland dome in the Tensleep, was completed for 50 bbls. of oil and 3,400,000 feet of gas. The Ohio Oil Co. and California Co. No. 1 Union Pacific, on the Medicine Bow structure in Carbon County, an offset to the discovery, was completed for 340 bbls. an hour of oil testing 64 gravity in the first and second Sundance sands. In Montana the Santa Rita Oil & Gas Co. No. 1 Lander, on the west side of the Cut Bank field, which came in for 800 bbls. in the Sunburst sand, has increased to 2,000 bbls. a day and two near completions in the vicinity will prove whether it is a freak. The Last Chance structure in Emery County, Utah, where the Ramsey Petroleum Corp. made a gas discovery last year, is to be given another test with rotary for oil.

NEW MEXICO

In the Monument area, Lea County, New Mexico, Shell Petroleum Corp. No. 1 State "D," C NW SE section 19-19-37, produced 2,952 bbls. of oil through tubing in the first 24 hours. Oil pay was encountered at 3,958 to 4,033 feet, total depth. Amerada Petroleum Corp. No. 1 Phillips, NE NE NE section 1-20-36, produced 1,596 bbls. of oil through tubing in the first 24 hours, with gas gauging 1,000,000 feet. Oil pay was found at 3,796 to 3,900 feet, total depth. Packer was set at 3,869 feet. Gulf Oil Corp. No. 1 Graham-State "D," C SW SE section 19-19-37, had pay at 3,845 to 3,987 feet; drilled to 4,153 feet, total depth, encountered sulfur water and plugged back to 3,987 feet to complete. It flowed 2,112 bbls. of oil through tubing in the first 24 hours, and gas measured 2,403,000 feet.

In the Eunice area, the largest producer of six wells completed was the Gulf Oil Corp. No. 1 Bell-State "C," C NW NW section 15-21-36. It flowed 1,584 bbls. of oil through tubing in 24 hours and produced 1,862,000 feet of gas. Oil pay was topped at 3,828 feet; total depth 3,885 feet. Same operators No. 7 Bell-Ramsey-State, C SW NW section 4-21-36, produced 231 bbls. of oil through tubing in the first 24 hours after acidizing; gas gauged 3,840,000 feet. The oil pay was topped at 3,780 feet and based at 3,893 feet; total depth 4,217 feet. Drill stem test showed sulfur water and it was plugged back to 3,893 feet to complete. Same operators No. 3 Orcutt, C NE NW section 5-21-36, had oil pay at 3,785 to 3,894 feet, total depth, flowed 473 bbls. of oil natural through tubing in 24 hours and was completed. Gas gauged 2,800,000 feet.

Amerada Petroleum Corp. No. 3 Houston, C NW NE section 7-21-36, was acidized and flowed 576 bbls. of oil in 24 hours through tubing choke. Pay was found at 3,815-95 feet, total depth. Gulf Oil Corp. No. 1 H. C. Collins, C SE NW section 14-21-36, had natural flow of 624 bbls. of oil through tubing in the first 24 hours. Gas gauged 995,000 feet. Pay was topped at 3,765 feet and based at 3,850 feet, total depth. Humble Oil & Refining Co. No. 8 State "B," C SE SE section 29-21-36, was completed at a total depth of 3,909 feet in oil pay topped at 3,799 feet. It was acidized and flowed 1,200 bbls. of oil through three-quarters inch tubing choke in 24 hours. Gas measured 548,000 feet.

In the Sims area, Skelly Oil Co. No. 1 R. R. Sims, C SE SE section 4-23-37, topped pay at 3,518 feet; total depth 3,339 feet. It flowed 70 bbls. in 24 hours through casing; was shot, and flowed 73 bbls. through tubing choke in 24 hours. Gas gauged 1,700,000 feet.

Ohio Area

Ohio Oil Co. No. 1 State-Maxwell, C NE NW sec. 16-22-36. T.D. 3,926 ft.; flowed 86 bbls. in 7 hrs.; testing.

Ohio Oil Co. No. 4 State-McDonald, C SE SE sec. 16-22-36. T.D. 3,920 ft.; flowed 70 bbls. oil and 10 bbls. water in 24 hrs. on gas lift; testing.

Shell-Devonian No. 1 Christmas, C NE NE sec. 21-22-36. T.D. 1,510 ft.; set 9⅝-in. casing.

Gulf Oil Corp. No. 1 A. L. Christmas, SE SE SE sec. 27-22-36. T.D. 4,310 ft.; to plug back to 3,625 ft.; shut in; ungauged gas well.

Sims Area

Samedan Oil Co. No. 1 Parks, 330 ft. from S and 400 ft. from W lines, SW¼ sec. 14-22-37. Drlg. 970 ft.

Continental Oil Co. No. 1-A-22 Elliott, C SW SW sec. 22-22-27. Rigging up rotary.

Skelly Oil Co. No. 1 B. L. King, C SW SE sec. 32-22-37. T.D. 3,680 ft.; shot with 230 qts.; cleaning out.

Skelly Oil Co. No. 1 Ella Simms, C SW NE sec. 3-23-37. Location.

Skelly Oil Co. No. 1 A. L. King, C SE NW sec. 4-23-37. T.D. 3,450 ft.; set 7-in. csg.

Penrose & Rowan No. 2 Cary, C NE SW sec. 22-22-37. Location.

Sun Oil Co. No. 1 Richards, C NE SE sec. 6-23-37. Location.

Hobbs Area

Shell Pet. Corp. No. 1 State "E," C E half SE SE sec. 14-18-37. T.D. 4,374 ft.; P.B. 4,178 ft.; shut down.

Sun Oil Co. No. 1 McKinley, SW SW NE sec. 20-18-38. T.D. 4,242 ft.; flowed 36 bbls. in 24 hours; to pump.

Gulf Oil Corp. No. 4 North Grimes, SW SW NE SW sec. 21-18-38. Drlg. 910 ft.

Gulf Oil Corp. No. 1 Steve Taylor, C SE NE sec. 24-18-38. T.D. 4,883 ft.; P.B. 4,587 ft.; cleaning out.

J. P. Cusack No. 2 Moon "B," SW cor. NE sec. 28-18-38. T.D. 227 ft.; R.U.R.

Continental Oil Co. No. 3-B-13 State, C NE SW sec. 13-18-37. Building rig.

Monument Area

Texas Co. No. 2 Saunders, C SW SE sec. 18-19-37. T.D. 265 ft.; set 15½-inch. casing.

Gulf Oil Corp. No. 4 Culp, C SW NE sec. 19-19-37. Drlg. 2,770 ft.

Gulf Oil Corp. No. 5 Culp, C SE NE sec. 19-19-37. Drlg. 3,288 ft.

Texas Co. No. 1 State "G," C SE SW sec. 19-19-37. T.D. 3,787 ft.; waiting on whipstock.

Texas Co. No. 2 State "G," C SW SW sec. 19-19-37. T.D. 3,870 ft.; set 7-in. casing.

Oilwell Drlg. Co. No. 1 State "A," C SW NE sec. 29-19-37. T.D. 134 ft.; set 12½-in. casing.

Gulf Oil Corp. No. 1 Luthy, C SW NW sec. 29-19-37 Spudded.

Amerada Pet. Corp. No. 1 State "O," C NW NE sec. 30-19-37. Drlg. 1,000 ft.

Continental Oil Co. No. 1-C-30 State, C NE NW sec. 30-19-37. Drlg. 2,290 ft.

Continental Oil Co. No. 2-C-30 State, C NW SW sec. 30-19-37. Drlg. 1,200 ft.

Ohio Oil Co. No. 1 State-Elliott, C NW SE sec. 30-19-37. Drlg. 3,341 ft.

Amerada Pet. Corp. No. 1 Culp, SW SW SE sec. 31-19-37. Drlg. 2,296 ft.

Anderson & Prichard Oil Corp. No. 1 Britt "A," C SE SW sec. 6-20-37. T.D. 2,410 ft.; set 9⅝-in. casing.

Texas Co. No. 1 Phillips, NW NW NW sec. 6-20-37. T.D. 3,780 ft.; set 7-in. casing.

Anderson & Prichard No. 2 Britt, C NE NW sec. 7-20-37, ⅜ mile W of Barber lease. T.D. 3,847 ft.; flowed 143 bbls. in 15 minutes; shut in.

Gulf Oil Corp. No. 2 Graham-State "C," C NW NE sec. 24-19-36. T.D. 3,880 ft.; set 5½-in. casing.

Texas Co. No. 2 State "F," C SE SE sec. 24-19-36. Drlg. 3,828 ft.

Amerada Pet. No. 1 Weir "A," C NW SW sec. 25-19-36. Drlg. 3,900 ft.; 2,000 ft. oil in hole.

Skelly Oil Co. No. 1 Christmas, C SW SW sec. 25-19-36. Drlg. 3,550 ft.

Gulf Oil Corp. No. 1 Graham-State "E," SE SE SE sec. 36-19-36. T.D. 4,024 ft.; P.B. to 3,900 ft.; waiting.

Amerada Pet. Corp. No. 3 Weir, C NW SW sec. 35-19-36. Rigging up rotary.

Shell Pet. Corp. No. 2 State "B," C NW NW sec. 36-19-36. Drlg. 945 ft.

Amerada Pet. Corp. No. 1 State "M," C SE NW sec. 2-20-36. T.D. 3,920 ft.

Amerada Pet. Corp. No. 2 Weir, C NW NW sec. 2-20-36. Drlg. 3,267 ft.; flowed 185 bbls. in 18 hrs.; acidized.

Barnsdall Oil Co. No. 4 Cooper, C SE NE sec. 2-20-36. T.D. 3,500 ft.; set 7-in. csg.

Amerada Pet. Corp. No. 3 State "J," C NE SW sec. 2-20-36. Drlg. 170 ft.

Continental Oil Co. No. 1-A-3 J. L. Reed, C NE NE sec. 3-20-36. T.D. 257 ft.; set 10¾-in. casing.

Gulf Oil Corp. No. 6 Culp, C NW NE sec. 18-19-37. Location.

Gulf Oil Corp. No. 2 Graham-State "D," C SE SE sec. 19-19-37. Cellar and pits.

Shell Pet. Corp. No. 2 State "D," C NE SE sec. 19-19-37. Location.

Gulf Oil Corp. No. 1 G. C. Mathews, C SW SE sec. 6-20-37. Cellar and pits.

Gulf Oil Corp. No. 1 A. B. Reeves, C NW SW sec. 29-20-37. Wildcat; location.

Gulf Oil Corp. No. 3 Graham-State "C," C SW NE sec. 24-19-36. Location.

Amerada Pet. Corp. No. 4 Weir, C SE NW sec. 35-19-36. Bldg. rig.

Sun Oil Co. No. 5 Weir, C SW NE sec. 35-19-36. Location.

Sun Oil Co. No. 6 Weir, C NW NE sec. 35-19-36. Location.

Cooper Area

Republic Prod. Co. No. 1 Davis, C SW SW sec. 34-22-36. S.D. indefinitely.

General Crude Oil Co. No. 1 State "F," C SW SW sec. 2-24-36. T.D. 3,590 ft.; flowed 55 B.P.D.; to deepen.

Gulf Oil Corp. No. 2 J. M. Cooper, C NW SE sec. 14-24-36. T.D. 3,698 ft.; P.B. 3,550 ft.; packer set 3,460 ft.; est. 15,000,000 ft. gas.

Liberty Oil & Drlg. Co. No. 1 J. W. Hair, C SW SE sec. 24-24-37. Drlg. 850 ft.

Plains Prod. Co. No. 1 R. L. Mosley, C NW SE sec. 34-24-37. Drlg. 1,560 ft.

Lea County—Miscellaneous

Culbertson-Irwin & Stovall No. 1 J. B. Humphrey, C SE SW sec. 3-25-37. Drlg. 2,390 ft.

Plains Prod. Co. No. 1 George Smith, C SE SE sec. 4-25-37. T.D. 1,376 ft.; set csg. and waiting.

Culbertson-Irwin & Stovall No. 1 J. A. Stuart, C SW SE sec. 10-25-37. Drlg. 2,565 ft.

Harry Leonard No. 1 Justice, SW NW NW sec. 20-25-37. T.D. 3,501 ft.; P.B. 2,970 ft.; to make gasser.

Harry Leonard No. 1 Leonard-Lanhart, C SW NE sec. 21-25-37 (on Humble acreage). Drlg. 2,935 ft.

Texas Co. and Repollo Oil Co. No. 1 Lanchart, C NE sec. 29-25-37. Drlg. 340 ft.

Stanolind O. & G. Co. No. 29 Cyrus Farnsworth, C SW NW sec. 18-26-37. T.D. 3,060 ft.; P.B. 3,050 ft.; D.S.T. showed 50 bbls. fluid per hr.; P.B. 3,035 ft.; waiting.

W. L. Todd et al No. 1 Lemon Permit, C NW SW sec. 17-21-32. T.D. 3,709 ft.; S.D.; contract depth.

Maljamar O. & G. Co. No. 6 Baisch, C NW SE sec. 21-17-32. Drlg. 3,585 ft.

Eddy County

Etz Bros. No. 2 State, C NW SW NE sec. 16-17-30. Drlg. 1,730 ft.

Ohio Oil Co. No. 1 State-McCullough, SE SW SW sec. 16-17-30. T.D. 3,670 ft.; set 6⅝-in. pipe.

Premier Pet. Corp. No. 2 Dexter "E," NW SW NE sec. 26-17-30. Drlg. 1,545 ft.

Emperor Oil Co. No. 2 Puckett, C NW NE sec. 24-17-31. T.D. 3,933 ft.; flowed 100 B.P.D. through tbg.

Tignor, Etz & Keys No. 1 Keys "B," sec. 3-17-28. Drlg. 562 ft.

Red Lake Oil Co. No. 6 State, NE NE SW sec. 22-17-28. M.I.M.

D. & B. Oil Co. No. 1 Jenkins, NW SW NW sec. 20-17-30. T.D. 3,258 ft.; testing; est. 200 B.P.D.

Dexter & Berry No. 1 Berry, NW NE NW sec. 21-17-30. T.D. 525 ft.; set 8¼-in. csg.

F. W. & Y. Oil Co. No. 73 State, NE NW NE sec. 10-19-28. Drlg. 2,050 ft.

Dooley & Dixon No. 1 Commerce, C W½ NW NW sec. 18-20-27. T.D. 409 ft.; U.R.

Tex Pattillo No. 2 Thomason, NE cor. sec. 1-20-28. Drlg. 793 ft.

Chaves County

Tannehill No. 2 Campbell, C NE SE sec. 1-11-25. S.D. 905 ft. in lime.

Eunice Area

Continental Oil Co. No. 6-B-4 Meyer, C S half SE NW sec. 4-21-36. Drlg. 3,958 ft.

Continental Oil Co. No. 7-B-4 Meyer, C NW SE sec. 4-21-36. T.D. 1,673 ft.; set 7⅝-in. csg.

Continental Oil Co. No. 8-B-4 Meyer, C SW NE sec. 4-21-36. T.D. 1,690 ft.; set 7⅝-in. csg.

Gulf Oil Corp. No. 8 Bell-Ramsey-State, C NW NW sec. 4-21-36. Bldg. rig.

Devonian Oil Co. No. 3 State-Heasley, C NE NE sec. 5-21-36. Drlg. 3,044 ft.

Gulf Oil Corp. No. 1 Orcutt, C SW SE sec. 5-21-36. T.D. 3,862 ft.; fishing.

Gulf Oil Corp. No. 2 Orcutt, C NE NE sec. 5-21-36. Spudded.

Gulf Oil Corp. No. 1 Graham-State "E," C SW SE NE sec. 6-21-36. T.D. 3,890 ft.; acidized.

Humble O. & R. Co. No. 3 Adkins, C NE SW sec. 10-21-36. Rig.

Humble O. & R. Co. No. 1 J. D. Knox, C NW SE sec. 10-21-36. T.D. 3,699 ft.; fishing.

Gulf Oil Corp. No. 2 Bell-State "C," C SW NW sec. 15-21-36. Rigging up rotary.

Tide Water Oil Co. No. 2 State "D," C SW SE sec. 16-21-36. Drlg. 3,597 ft.

Tide Water Oil Co. No. 3 State "D," C NE SE sec. 16-21-36. Drlg. 3,022 ft.

Continental Oil Co. No. 4-A-18 Lockhart, C SW SW sec. 18-21-36. Drlg. 3,899 ft.

Continental Oil Co. No. 1-B-18 Meyer, C SE NW sec. 18-21-36. T.D. 3,942 ft.; flowed 156 bbls. in 1¼ hrs.

Continental Oil Co. No. 4-A-18 Meyer, C SW NE sec. 18-21-36. Cellar and pits.

Gulf Oil Corp. No. 5 Arnott-Ramsey "C," C SE SW sec. 21-21-36. Drlg. 3,395 ft.

Gulf Oil Corp. No. 6 Arnott-Ramsey "C," C NE NW sec. 21-21-36. T.D. 404 ft.; fishing.

Continental Oil Co. No. 3-B-28 Lockhart, C NW SW sec. 28-21-36. Drlg. 3,534 ft.

Continental Oil Co. No. 4-B-28 Lockhart, C SW SW sec. 28-21-36. T.D. 3,865 ft.; set 5½-in. csg.

Continental Oil Co. No. 5-B-28 Lockhart, C NW NE sec. 28-21-36. T.D. 1,623 ft.; set 7⅝-in. csg.

Empire G. & F. Co. No. 2 Felton, C SE NW sec. 28-21-36. Drlg. 3,130 ft.

Humble O. & R. Co. No. 9 State "B", C NE SW sec. 29-21-36. Rigging up rotary.

Continental Oil Co. No. 2-A-30 Lockhart, C NE NE sec. 30-21-36. T.D. 3,953 ft.; testing.

Empire G. & F. Co. No. 4 State "D", C SE NE sec. 32-21-36, five-eighths mile N part of No. 157 lease. T.D. 3,810 ft.; set 7-in. csg.

General Crude Oil Co. No. 1 State, C NW SW sec. 32-21-36, one-half mile NW part No. 157 lease. T.D. 3,974 ft.; 3,500 ft. fluid in hole.

Empire O. & R. Co. No. 5 State "D", C NE NW sec. 32-21-36. Rigging up rotary.

Gulf Oil Corp. No. 2 Janda "B", C NE SE sec. 33-21-36. Location.

Gulf Oil Corp. No. 1 Arnott-Ramsey "D", C NW NW sec. 33-21-36. Drlg. 3,575 ft.

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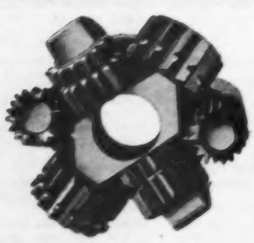

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DEAN CORE DRILLS

Barnsdall Oil Co. et al No. 1 Hardy, C SE NE sec. 29-21-37. T.D. 3,800 ft.; hole full of oil; tubing.
The Texas Co. No. 1 State "H", C SE SE sec. 31-20-37, west offset No. 196 lease. T.D. 1,185 ft.; drlg. plug.
Shell Pet. Corp. No. 1 State-Endura "D", C SE NW sec. 11-21-35. Drlg. 3,501 ft.
Shell Pet. Corp. No. 1 State "H", C SE SE sec. 12-21-35. Drlg. 3,674 ft.
Continental Oil Co. No. 6-A-17 Meyer, C NW SW sec. 17-21-36. Building rig.
Continental Oil Co. No. 5-A-18 Meyer, C SE NE sec. 18-21-36. Location.

NORTHWEST NEW MEXICO

Bernalillo County

Norine Realty Co., Inc., No. 2 Gallegas grant, SE NW NW sec. 19-11n-4e. Drlg. 1,200 ft. in sand and gravel.

Harding County

Khaay et al No. 1 De Baca, C sec. 19-20n-31e. Running 8¼-in. at 847 ft.; 10-in. at 250 ft.

McKinley County

The Montrose Oil & Gas Co. No. 1 State, NE cor. section 28-20n-9w, Red Mountain district, missed the shallow sand and was plugged and abandoned at 600 feet. It is located a mile east of the discovery well which came in for a few barrels a day at a total depth of 560 feet last June. So far drilling around the discovery has not developed anything of special importance.

Seward et al No. 1 State, NE SE NE sec. 2-19n-9w. Drlg. 535 ft. in shale.
Seward et al No. 1 fee, C NW SE sec. 35-20n-9w. S.D. 437 ft. in shale.
Dave Stacey No. 1 State, NE NE SW sec. 21-20n-9w. Drlg. 100 ft.
Forth & Hickerson No. 2 Santa Fe, NE NW NE sec. 29-20-9w. Drlg. 435 ft.; carrying 6⅝-in.
Foster & Clark No. 1 Railroad Land, NE NE NW sec. 29-20-9w. Rigged and ready to spud.
Montrose O. & G. Co. No. 1 State, NE NE sec. 28-20n-9w. Rigging up spudder (first report).

Quay County

Quay County Dev. Co. No. 1 Wallace, SW SW SE sec. 19-9n-33e. S.R. 816 ft.; rainbows at 814 ft.; show of S.W. at 775 ft.

Rio Arriba County

El Vado Structure Properties Co., Ltd., No. 1 Tierra Amarilla grant, NE sec. 26-3s-1e (unsurveyed).

San Juan County

Atchison & Galloway No. 1 Patd., C SE SE sec. 19-29n-11w. R.U. machine (first report).
W. L. Hair No. 1 Hair, NE NW NE sec. 22-29n-11w. Set 8¼-in. at 112 ft. (first report).
Jack Amenda No. 3, SW NW SW sec. 25-30n-12w. Drlg. 1,275 ft.; show of 22,000 ft. of gas at 925-65 ft.
Jack Amenda No. 4 fee, NW NE SW sec. 25-30n-12w. Drlg. 648 ft. in sand; water at 601-07 and 647 ft.
J. D. Cross et al No. 1 Wilson, SW SW SE sec. 17-30-11w. S.D. 810 ft.
Continental Oil Co. No. 52 Tribal, NE SE NW sec. 2-29n-19w. Rigging (first report).
Cross & Pool No. 1 Aztec, sec. 1-30-11w. Making water shutoff at 740 ft.
Nick Spatter No. 1 fee, C NE SW sec. 32-31-11w. S.D. 1,780 ft. in shale.
Southern Union Gas Co. No. 5 Government, C NE NE sec. 14-28-11w. T.D. 1,824 ft. in sand; 7-in. at 1,809 ft.; W.O.C.
Southern Union Gas Co. No. 6 Government, C NW NW sec. 19-28n-10w. Location (first report).

San Miguel County

Cabra Springs O. & G. Co. No. 1 Cabra Springs ranch, SW NE NE sec. 22-12n-22e. T.D. 4,045 ft.; prep. to resume.
Cabra Springs A. & G. Co. No. 1 Jones ranch, SW SW SW sec. 21-12n-22e. T.D. 726 ft.; prep. to build standard rig to replace Fort Worth spudder.

Torrance County

45 Pet. Co. No. 1 Greenfield, C NW SW sec. 17-9-8e. Drlg. 1,500 ft.; show of gas.
Bruce Frazier No. 1 Frazier, SE sec. 12-2n-3le. Drlg. 1,210 ft. in granite wash; water at 882-86 ft.

COLORADO

Adams County

Glenridge Oil Corp. No. 1 Hills, SE SE NE sec. 27-3s-64. T.D. 4,415 ft.; cmtd. caves; drlg. plug.
Riddle Pet. Co. No. 1 Baxter, C SW sec. 2-2s-6w. S.D. 700 ft. for D.P.

Archuleta County

The Price district in Archuleta County, 6 miles north of New Mexico and 15 miles southeast of Pagosa Springs, in which the William E. Hughes estate brought in two wells in the Dakota at 1,100 feet last year for an estimated production of 500 bbls. each, opening a new field, sprang into the limelight this week with another completion which points to a major discovery. The estate No. 5 Gramps, on unsurveyed land but approximately in the SE NW SE section 24-33n-2e, was completed March 13. An unofficial report received while drilling was in progress said the well was flowing a 3-inch stream of oil. A subsequent telephone message from official sources said that the drill stopped after penetrating the second Dakota and that on a short swabbing test it was estimated to be good for from 1,800 to 2,200 bbls. a day. No long test could be made for lack of storage facilities, and the well was shut in. The production is coming from the second Dakota sand at approximately the same depth as Nos. 2 and 3 Gramps. No. 5 Gramps is three locations to the north of No. 3, which was completed last November at 1,140 feet in the second Dakota. The oil in this well is approximately 32.3 gravity. Same interests No. 4 Gramps, CSL SE SE section 24, one location east of No. 2, is a near completion in the second Dakota and is showing for a good well. This operation is on the Tierra Amarillo land grant which is owned in fee by the Hughes estate and comprises around 65,000 acres. The wells are near the western boundary of the grant. The estate, of which Lafayette Hughes, of Denver, is manager, has ample resources to carry on any development it undertakes and is in a peculiarly favorable position since it owns all the land in fee, and has done all of the exploration work on its own account. No announcement has been made as to the plans for marketing the oil.

Wm. E. Hughes Est. No. 4 fee (unsurveyed), CSL SE SE sec. 24-33n-2e. Drlg. 1,000 ft.
Oil City Pet. Co. No. 1-A Garnett, NW NE NW sec. 25-33n-2e. S.D. 1,515 ft.; top Dakota series 1,415 ft.
Oil City Pet. Co. and Archuleta O. & G. Co. No. 1 Reeder, Lot 5 (SW SE SW) sec. 24-33n-2e. Drlg. at 100 ft. in boulders and gravel.
H. L. Kendrick No. 1 Crowley (unsurveyed), sec. 2-32-1e. S.O.&W. in Morrison at 922 ft. with 8¼-in.

Baca County

Paul Robb et al No. 1, NW NW NW sec. 24-32-48w. Drlg. and pit, and wtr. well rig.

Boulder County

Leslie R. Steel and others No. 1 Maxwell, SW NE NW section 24-1n-71w, 3 miles west of the old Boulder field, was plugged back from 2,420 feet to the Muddy sand at 1,095-1,160 feet and completed for 2 bbls. per day after a shot. It is the discovery well for what promises to make a small pool.

Cheyenne County

Brittel Oil Co., Inc., No. 1 Steip, C NE NW sec. 26-12s-47w. Rigged up and ready to spud.

Jefferson County

Rainbow Oil Co. No. 1 Johnson, NE sec. 30-4s-68. Drlg.
Ruby Hill O. & G. Co. No. 1 Braden, SE cor. sec. 24-4n-69. Installing new sand line at 4,415 ft.

La Plata County

McGarr Pet. Co. No. 1 Pinton Mesa, CSL NE NE sec. 34-35n-12w. S.D. 1,300 ft. for 10-in.

Lincoln County

Consolidated Smelting & Metals Co. No. 1 Hancock, NE NE sec. 7-17s-52. T.D. 1,930 ft.; drlg. up baller.

Morgan County

Swisher et al No. 1 Lunt, 92 ft. W of E line and 360 ft. N of S line, sec. 3-4n-60. Drlg. 1,327 ft.; 4½-in. at 1,293 ft.

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Moffat County

Ohio Oil Co. No. 1 Robertson, C SW SW sec. 3-6n-92w. Loc.
Texas Co. No. 7 Knowlton, NE cor. Lot 8, sec. 10-4n-91w. T.D. 4,505 ft.; trying to free 6⅝-in. frozen at 4,495 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NE sec. 21-26n-17w. Contracted with Perry Coon to comp.; T.D. 3,705 ft.; preparing to drill by tools.

Prowers County

On account of the importance of the subsurface geology revealed in the Trojan Oil & Gas Co. No. 1 Lotus Oil, NW NE NE section 15-23-46, Lamar district, which was reported abandoned last week, a summary of sand record is herewith given: It started in the Dakota sand. It had shows of oil in the Kansas City lime at 3,602-24 feet; the Fort Scott lime at 4,019-33 feet and in narrow streaks in the Mississippian at 5,079-5,197 feet. Lowest formation tested was the Manitou limestone at a total depth of 5,913 feet. The showing in the Kansas City lime was found with 2,000 feet of water in the hole and could not be tested when drilled. The showing in the Fort Scott lime was tested by acidizing with 1,000 gallons of 50 per cent hydrochloric acid with no apparent increase in production. Samples were obtained of the oil in the Mississippian, but the quantity was small. After drilling to 5,913 feet, it plugged back and the Fort Scott lime was shot with 40 quarts and after cleaning out made 2 bbls. per day. It was then plugged back to the Kansas City lime, bailed dry and tested for a week, but it failed to make a commercial well, there being some water with the oil. A test 12 miles to the northeast of the Lamar well on the Cottonwood structure probably will be drilled this spring by a group of majors.

Park County

South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. Landed 6¼-in. on bottom at 3,990 ft.

Routt County

Mid-Colo Pet. Co. No. 1 Omoholt, NE SE SE sec. 29-4n-87w. S.D. 2,860 ft. on account of weather.

WYOMING

Albany County

California Co. No. 3 Hoist, 1,650 ft. W of E line and 970 ft. N of S line, sec. 18-17n-77w. T.D. 3,288 ft.; P.B. to 2,900 ft. to straighten hole.
California Co. No. 1 Wilson, NW SW SW sec. 18-17n-76w. M.I. rotary equipment to resume at 1,010 ft.

Big Horn County

The Kinney-Coastal Oil Co. No. 3 Government, SW NW NE section 24-56-98, Garland dome (across the line in Park County), is located as a completion in the Tensleep at 4,338 feet for 50 bbls. of oil and 3,400,000 feet of gas a day, although the operator will continue experimenting with the well in an effort to increase production. This well proves the theory that there was a fair chance of getting oil on the flanks of the Garland dome in the sands which produce gas in the field. The company deepened this well, originally drilled by the Producers & Refiners Corp., to test that theory. The unit plan of development which has been approved as to form, includes approximately 7,000 acres on the structure in which Kinney-Coastal has the operating rights. No. 3 Government topped the Tensleep at 4,185 feet and encountered oil saturation at 4,245 feet.

Observations made by J. A. Warren, of the Kinney-Coastal company, and others while this well was spraying black oil offers a suggestion as to how the dust storms which have devastated many mid-western areas may be abated. A dust storm was in progress at the time and the oil spray covered the ground for more than half a mile. The coating was just sufficient to lay the dust and none of the soil was blown away by the gale. It is claimed that the thin coating in no way damages the soil as it can be plowed under. Representatives of the U. S. Geological Survey are investigating the possibilities. A similar demonstration occurred at the Golden Cycle mill west of Colorado Springs. The mill owners had used burlap to hold down the dust from mill tailings unsuccessfully. Then they tried spraying the dump with black oil (not road oil but the volatile crude) and it solved the problem.

The Ohio Oil Co. No. 1 Lindsay, SW cor. NE section 23-56-97, Byron dome, reported a completion last week, is rated at 400 bbls. a day on the pump from the Embar at 4,980-5,054 feet and the Tensleep at 5,054-5,184 feet.

The Montana-Wyoming Oil Co. No. 1 Allen, which has been blowing wild for several weeks, due to inability to kill it in a temperature 40° below zero, developed a freak. The drill pipe was cut off by the friction at exactly 1,158 feet. Whether the gas was coming up through a fault at that depth, or going out of the hole into an upper sand, cannot be determined.

J. W. Bales No. 1 Parker, C SW SW sec. 23-4-89. S.D. 690 ft. for pipe.
Peter Evanhoff et al No. 1 McAllister, Lot 4, NW NE SE sec. 35n-87w. S.D. 2,350 ft.
Ohio Oil Co. No. 1 Orson Vail, SW NW NE sec. 23-56n-97w. Location (first report).
Ohio Oil Co. No. 1 Robert Till, C SE SW sec. 24-56n-97w. Spudding at 20 ft.
Ohio Oil Co. No. 4 Byron Union, SW SW NE sec. 22-56-97. Coring at 5,697 ft.; top of saturation at 5,596 ft.
Montana-Wyoming Oil Co. No. 1 Allen, 270 ft. from N line, 930 ft. from E line, Lot 52 (SE NW SE) sec. 32-56n-97w. T.D. 3,835 ft.; fishing for drill pipe; 1,000 ft. recovered.
Peay Oil Co. No. 1 Denio, Tract 43-C, sec. 15-55n-97w. T.D. 3,890 ft.; will try to go to Tensleep.
J. H. Shaffer No .1 Keachie, C SW SW sec. 5-49-61. T.D. 1,450 ft.; sidetracking tools at 1,366 ft.
W. O. Taylor et al No. 1 Hoskins, Lot 5 (SE SE) sec. 25-56n-97w. S.D. 5,275 ft.

Campbell County

G. J. Sherin et al No. 1 Rhodes, NE SE S sec. 24-49n-74w. Derrick up, sump and reservoir completed (cor. loc.).

Carbon County

The Ohio Oil Co. and the California Co. have another big well on the Medicine Bow structure in their No. 1 Union Pacific, NE SW NW section 25-21n-79w, which was completed at 5,475 feet for 175 bbls. per hour with 2,900,000 feet of gas from the first Sundance sand at 5,259-5,303 feet and 165 bbls. per hour with 2,000,000 feet of gas from the second sand at 5,381-5,475 feet, or at the rate of 8,160 bbls. a day from the two sands. The remarkable feature of the well in addition to its size is the high gravity of the crude, which tests 64 degrees. The well made an initial flow of 75 bbls. in 15 minutes from both sands. It is located 682 feet east of No. 1 Kyle, the discovery well, which was completed last June for 6,360 bbls. and 81,000,000 feet from the two sands at a total depth of 5,393 feet. No. 1 Union Pacific was still in sand when drilling stopped. It is one of the largest wells completed in Wyoming, being exceeded by a well completed in Salt Creek in 1917 and by a shale well on Teapot dome which made a spectacular flow at first but did not hold up. Location has been

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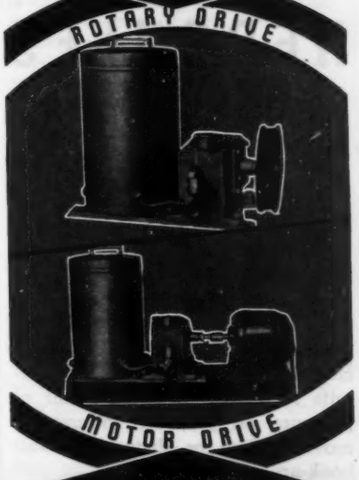

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made for No. 3 Union Pacific, which will be nearly a mile to the northwest.

General Pet. Corp. No. 1 Union Pacific, SW NW sec. 5-19n-83w. R.U.R.
Ohio Oil Co. and California Co. No. 2 Union Pacific, C NE NE sec. 35-21n-79w. Rig.
Ohio Oil Co. and California Co. No. 3 Union Pacific, C NE SE sec. 23-21n-79w. Loc. (first report).
Ohio Oil Co. No. 1 State, SE NW NE sec. 34-20n-78w. Drlg. 2,949 ft. in sh.
Ohio Oil Co. No. 8 Harrison & Cooper, CWL, W½ SW sec. 35-20-78w. T.D. 3,374 ft.; ran and cmtd. 4½-in. lnr. at 3,704-3,318 ft.; drlg. plug; top of Sundance 3,305 ft.
Ohio Oil Co. No. 1 State, SE SE NE sec. 34-20n-78w. Drlg. 2,950 ft.
Union Oil Co. of California and Mutual Oil Synd. No. 1 Union Pacific, 1,890 ft. from E line and 1,320 ft. from S line, sec. 1-18-78w. S.D. 4,400 ft.; (cor.).

Converse County

John Ackert No. 1 Daniels. SW SW NE sec. 17-32-71. S.D. 4,004 ft.

Hot Springs County

California Exploration Co. No. 2 Government, NW SW NW sec. 4-44-96. T.D. 4,235 ft.; 6⅝-in. at 4,137 ft.; setting bridges to locate wtr.
Ohio Oil Co. No. 73 Mill Iron Cattle Co., NE SW SE sec. 19-46n-98w. Cellar.
Stanolind O. & G. Co. No. 20 State-Ridgely, SE NE SE sec. 19-46n-98w. T.D. 3,323 ft.; cmtng. to regain circulation

Lincoln County

Senrab Oil Corp. No. 3 Government, CSL SE NW sec. 10-26n-113w. S.D. 1,020 ft.

Natrona County

Empire State Oil Co. No. 15, NW SE NE sec. 11-33n-83w. Drlg. 727 ft.

Niobrara County

Argo Oil Co. No. 7 Elliott, C NE NW sec. 5-35n-65w. Cmtd. 13⅜-in. at 200 ft.
Argo Oil Co. No. 6 Elliott, C SE NW sec. 5-35n-63w. Drlg. 2,180 ft.
Black Hills Ref. Co. No. 1 Mills Est., C SW NW sec. 27-36n-64w. Spudded and S.D. account of weather.
J. H. Huber Co. No. 1 Jones, NE SE NW sec. 6-25n-65w. T.D. 4,096 ft.; P.B. to 4,032 ft.; running 2-in. tbg. and R.U. for pump test.
Ohio Oil Co. No. 3 Agnes Rohlff, C SE NE sec. 32-36n-65w. Set 10-in. at 192 ft.; W.O.C.
Ohio Oil Co. No. 5 Converse Sheep, C SE SW sec. 32-36n-65w. Drlg. 2,211 ft.
Ohio Oil Co. No. 3 Richards & Comstock, C NE SW sec. 22-36n-65w. R.U.R.
S. & H. Dev. Co. No. 1-A Olinger, SE NE NW sec. 1-36-63. T.D. 1,674 ft.; S.O. Dakota wtr. with 4½-in. at 1,620 ft.; fsg. for tools; 600 ft. O.I.H. from Lakota at 1,666-74 ft.

Sheridan County

Beaver Creek Oil Co. No. 1 Allison, SW SE sec. 15-55n-85w. Drlg. 3,050 ft. and carrying 4½-in.

Uinta County

Intermountain Pet. Corp. of Utah No. 1 Union Pacific-Hayes, SW NW SW sec. 24-19n-118w. Drlg. 1,575 ft.
W. D. Marshall No. 1 Government, NW SW SE sec. 12-15n-118w. S.D. 1,260 ft.

Washakie County

Ariton & Doyle No. 1 Government, SW SW SE sec. 29-48-91w. S.D. 1,115 ft.
Wyoming O. & R. Co. No. 2 Government, SW SW SW sec. 21-48-90. T.D. 1,404 ft. (cor.); fsg. for tools.

Weston County

Henry Egert No. 2, SW NE SE sec. 8-46n-62. Feeling for sand below 200 ft. with S.O.
Conway Oil Corp. No. 1, SE SE NE sec. 7-41n-60. Fsg. for tools at 2,987 ft.

MONTANA

Big Horn County

Daniels Pet. Co. No. 1 May, C SE SE sec. 13-1s-33e. S.D. 3,000 ft. after setting 6⅛-in. at 2,895 ft. and drlg. plug.

Fallon County

Montana-Dakota Utilities Co. No. 1, NE NW sec. 17-3n-62e. S.D. 6,349 ft.; account weather.

Fergus County

Minnesota Co. No. 1 Fenholt, SE NW SW sec. 24-21n-18e (cor.). Drlg. 310 ft.
Judith Operation Co. No. 1 Government, C SW SW sec. 26-22n-17e. S.D. 1,052 ft. (cor.).
Kalispel-Kevin Oil Co. No. 2 Emmons, C SW SE sec. 29-21-18e. Drlg. 576 ft.

Glacier County

Two near completions in the Cut Bank field will be watched with close interest on account of their proximity to the best well ever completed in that pool. Last month the Santa Rita Oil & Gas Co. No. 1 Lander, C N half SE section 16-35-?w, was practically a failure in the Cut Bank sand at 2,915-65 feet, the horizon from which practically all the production comes. It was plugged back to test a small show in the Sunburst at 2,850-65 feet. It yielded a a surprise by coming in for 800 bbls. It increased and at last reports was making around 2,000 bbls. a day. This is not only the record well for the pool, but one of the few producers from the Sunburst sand in the field. It is on the west side of the pool on Blackfoot Indian lease. Santa Rita then spotted its No. 6 Tribal, 1,320 feet to the east and this week drilled through the formation where the Sunburst was expected. It found only a sandy shale at 2,810-30 feet and continued on down to the next sand. The Texas Co. No. 5 fee, 1,320 feet south of the Santa Rita No. 6, topped the Sunburst at 2,781 feet and will test that horizon before going on down. It set the 7-inch at 2,783 feet. These wells probably will disclose whether the No. 1 Lander is a freak or opens an important pool.

There were no completions and only one new location reported this week.

A. B. Cobb No. 5 Walberger, C NE NE sec. 35-36n-6w. Rig.
Cobb-Pardee No. 1 Stufft, C SE NW sec. 25-36n-6w. S.D. 732 ft.
Cobb-Reagan No. 1 Jackson, NE NW NW sec. 5-32n-5w. Set 7-in. at 2,747 ft.; drlg. plug.
A. E. Crumley No. 1 Tribal, C SW SE sec. 31-33n-5w. Bldg. rig.
Gardner et al No. 1 Cole, C NE SW sec. 2-32n-6w. Drlg. 360 ft.
Goodman Oil Co. No. 1 Tribal, SW NW SW sec. 25-33n-6w. Bldg. rig.
L. P. Jackson et al No. 1 Tribal, NW SE NW sec. 23-34n-7w. Ready to spud.
R. C. Jeffries No. 4 Lukens, NE NE NE sec. 12-33n-6w. S.D. 2,610 ft.
Kincheloe-Hanlon No. 1 State, SE SE SE sec. 25-33n-6w. Drlg. 2,760 ft.
Jack Marshall No. 1 Tribal, 140 ft. S of N line and 200 ft. E of W line, Lot 7, sec. 7-32-5w. T.D. 2,915 ft.; fsg. for lnr.
Montana Power Gas Co. No. 1 Eisler, 900 ft. WE and 1,980 ft. NS sec. 5-33n-5w. Rigging.
Montana Power Gas Co. No. 2 Coburn, C NW NE sec. 8-33n-5w. Colo. at 465 ft.; 10-in. at 513 ft.; W.O.C.
Nadeau Bros. No. 1 Tribal, C Lot 4, sec. 6-32n-5w. T.D. 2,545 ft.; fishing for tools.
Par Oil Co. No. 6 Haines, NE SW NE sec. 2-34n-6w. Spudding 290 ft.
Santa Rita O. & G. Co. No. 6 Tribal, 660 ft. S of C W line, sec. 15-35n-6w. T.D. 2,911 ft.; cmtd. 7-in. at 2,876 ft.; top Cut Bank 2,875 ft.
Santa Rita O. & G. Co. No. 1 Shearon, 660 ft. S of N line and 349 ft. W of E line, sec. 34-36n-6w. Fishing for bailer at 2,905 ft.
Santa Rita O. & G. Co. No. 1 Corey, NE NW SE sec. 5-32n-5w. S.D. 2,959 ft. for spudder.
Santa Rita O. & G. Co. No. 1 Barrington, SE SW NW sec. 24-33n-6w. Location (first report).
Nell Spencer No. 2 Tweedy, 925 ft. NS line, 1,980 ft. WE line, sec. 25-33n-6w. Cellar (first report).
R. C. Tarrant No. 6 Britton, C SE SW sec. 12-34n-6w. S.D.; rig.
R. C. Tarrant No. 5 Getty, NW NW SW sec. 2-34n-6w. Drlg. in at 2,910 ft.; 8¼-in. at 2,563 ft.
R. C. Tarrant No. 2 State, C NE SE sec. 36-34n-6w. Drlg. 1,970 ft.
R. C. Tarrant No. 7 Haglund, Jr., C SW SW sec. 12-34n-6w. Spudding 270 ft.
R. C. Tarrant No. 2 Reikhoff, SE NE SE sec. 3-34n-6w. Loc. (first report).
Texas Co. No. 5 fee, 660 ft. N of SW cor. sec. 15-35n-6w. Top Sunburst 2,781 ft.; cmtd. 7-in. at 2,783 ft.
Texas Co. No. 1 Marie Jones, C NW SW sec. 6-33n-5w. Drlg. 75 ft.
Texas Co. No. 1 Walker, C NE NE sec. 2-35n-6w. T.D. 2,765 ft.; U.R. 7-in.
Texas Co. No. 1 Tribal, Lot 4, 1,300 ft. from W line, 200 ft. from S line, sec. 2-33n-5w. M.I. rotary equip.
Wilkerson et al No. 1 Tribal, SW SE NE sec. 31-33n-5w. Drlg. 2,480 ft.
Whetstone et al No. 1 Tribal, C SE NW sec. 36-33n-6w. Rigging.

Petroleum County

West Dome Oil Co. No. 1, SW SE NE sec. 9-15n-29e. Drlg. 861 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. Drlg. 390 ft.

Pondera County

Wm. M. Fulton No. 1 Price, SW NE NE

(Continued on Page 92)

Highlights on JENSEN PUMPING UNITS

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West and North Texas

DISCOVERY IN DEEP LIME IN FAR WESTERN CRANE AREA

By
L. E. BREDBERG

FORT WORTH, Tex., Mar. 23.—The greatest feature in the Permian Basin, West Texas, for the week was the bringing in of a good well by the Humble Oil & Refining Co. 1,800 feet in the Big Lime, in its No. 1 J. B. Tubb in section 11, Block B-27, in the Tubbs or Sand Hills pool on the extreme western flank of Crane County.

This well flowed 861 bbls. of 37 gravity oil in 24 hours on a Railroad Commission potential test through 2½-inch tubing. Total depth is 4,375 feet in lime, with 8¼-inch casing set at 4,225 feet. Porous saturated lime at 4,292-4,343 and 4,361-75 feet, total depth, yielded the oil. The lime pay section was treated with 2,000 gallons of acid preparatory to completing.

The important feature of this well is that it is producing about 1,800 feet below the top of the main lime section, from which three other tests, including the small discovery well, are producing. The discovery was featured several years ago when it came in making oil after striking sulfur water, the first well in the district to produce oil below the water stratum. Many tests have been abandoned throughout the district after drilling from 200 to 500 or 600 feet into the lime, but this new producer lends encouragement to wildcatters in the district, and will no doubt result in tests being carried deeper into the lime section, if not through it.

This well is approximately 4 miles southeast of Gulf Oil Corp.'s Ordovician producer, the second Ellenberger (Ordovician) pool discovery in the district, recently completed for 123 bbls. initial production on pump, after plugging back from 6,450 feet to 6,317 feet to shut off water and shoot. It topped the Ellenberger at minus 4,090 feet and the pay was found at 5,979 feet.

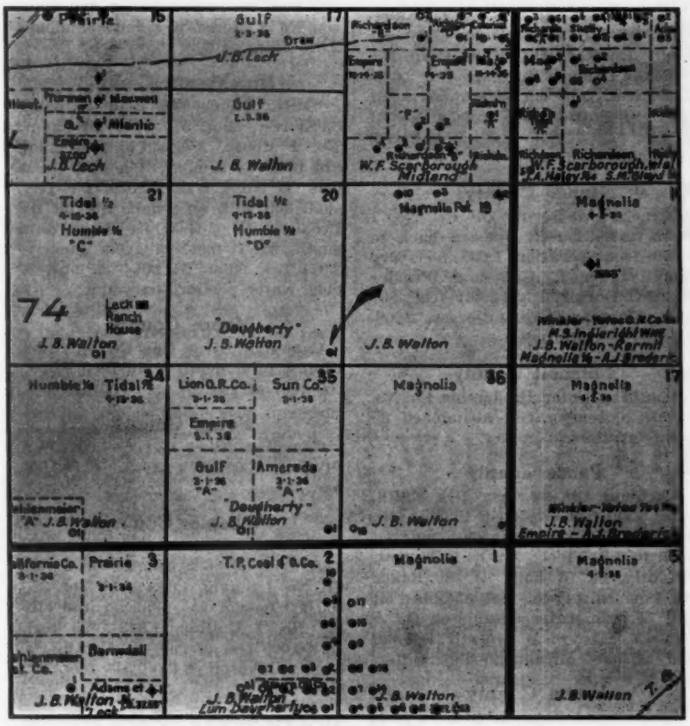
The Humble-Tubb test was previously scheduled to go to the Ordovician if it did not make a commercial producer in the Permian lime, but it is now to be produced from the upper lime horizon and the company has made location for a second test on its lease, about a quarter of a mile southeast of the new producer. It is in the center of the southwest of the northwest quarter of the section.

Acid treatment of an old well in the SW cor. section 11, revived and increased the production from 25 bbls. to 134 bbls. per day this week in Gulf Oil Corp. and others No. 1 Tubb, completed five years ago after plugging back from below 5,000 feet to 4,342 feet. The oil tested 33.8 degrees gravity, the well making 1,100,000 feet of gas with the oil.

Acidation helping the wells in this old but little drilled pool, and with a new factor having been discovered in the Humble producer, the pool should take on renewed life with considerable drilling taking place this year, although the Gulf Oil Corp. holds the bulk of the acreage in the area. It is truly a pool of major potentialities, considering the possibilities from the Permian and also the Ordovician lime producing strata. Sinclair Prairie Oil Co. and others completed a small producer in section 3 one of the two most important wildcats in the district, and has good chances of making an oil producer and opening the first pool in Gaines County. It is located about 3 miles northwest of Seminole.

Yoakum Discovery Acidized

The southeast Yoakum discovery of Cascade Oil Corp. and Honolulu Oil



Location of Humble Oil & Refining Co. No. 1-D Daugherty, in section 20, Block 74, a connecting link between the Kermit and Scarborough pools in Winkler County

(Map courtesy Zingery Oil Map Co., Fort Worth, Tex.)

a couple of weeks ago, but that test will no doubt be drilled deeper hoping to make a producer similar to the Humble-Tubb well.

Gaines County

Last week the report was broadcoast that the northern Gaines County test of Wash and others on the Averitt ranch in section 228, Block G, W.T.R.R. Survey, struck sulfur water and therefore looked due for abandonment. However, the water was soon exhausted and 12,000,000 feet of gas was struck below it. The gas blew the tools up the hole and caused another fishing job. The drill stem has been recovered, but bit is still being sought. This test had previously struck six pockets of gas. Total depth is 4,910 feet, but the hole is to be carried deeper as soon as the fishing job is completed. This is Corp. on the Bennett lands in section 678, Block D, John H. Gibson Survey, was treated with 2,000 gallons of acid on March 16 after bailing eliminated 1,000 feet of salt water in the hole at 5,112 feet, total depth, and the crews have been swabbing the hole all week, first through tubing, then pulling tubing to swab through the 7-inch casing. It swabbed 52 bbls. of oil through tubing in 24 hours ending at 7 a.m. March 20. When swabbing tests are completed the hole is to be drilled deeper in the hopes of finding more saturation in the lime section.

Lou Stogner is preparing to move in materials on tentative location in section 215, Block D, John H. Gibson Survey. This location, on lands of the Googins estate, is about 16 miles northwest of the Bennett discovery, and was made a couple of months ago. It will make the second active test for Yoakum County.

Water in Winkler

The Gulf Oil Corp. No. 1 E. R. Hill, in the SE quarter of section 9, Block B-11, 2 miles northeast of a small producer in section 18, is appearing as a dry hole after flowing 300 bbls. of sulfur water per hour which developed in drilling to 4,170 feet where it was ordered shut down, and probably will be plugged. Elevation is 2,807 feet. It is about 3½ miles east of the Halley-Kermit producing trend in Winkler County.

Deep Abandonment

Anderson and Prichard and others No. 1 W. M. Borders, deep test in northwest Culberson County, was ordered abandoned at 5,001 feet, 1 foot below contract depth. This test, located on a large block in which the Magnolia took a large interest. Pennsylvanian was topped at 4,219 feet, the test running low structurally. Elevation is 4,565 feet. Location is in section 34, Block 69, Public School Lands Survey.

Proposed Deep Test

Superior Oil Co. of California is planning an Ordovician test in the Chalk-Roberts pool in Howard County, according to field reports. Nelson & Olson are believed to have the drilling contract. It will be the second deep hole in the area. Moore and others recently abandoned a 10,906-foot hole several miles to the southwest in Glasscock County, without having found oil in commercial quantity, although it headed some 200 bbls. of oil at 10,115 feet after standing shut down several weeks. The Howard test is expected to be drilled in section 136, Block 29, W.&N.W. Survey.

Jones County

Danciger Oil & Refining Co. and L. H. Pearson are moving in for a test about half a mile southwest of the Sandy Ridge pool on the extreme east side of Jones County. It will seek production from the Bluff Creek and also from the King sand pay horizons. Location is in section 6, Block 15, T.&P. Survey.

Another wildcat location for the county was staked by W. W. Fondren on the Cox & Manley lands in F. Sieberman Survey No. 8, about 12 miles northeast of Abilene on a 4,000-acre block.

Ranger and Wichita Falls

Terry and Pace have staked location for a 1,000-foot wildcat 7 miles southwest of Albany in Shackelford County, intending to spud this week. Location is on the W. H. Green lands in the NW quarter section 49, Block 11, T.&P. Survey.

The Seaboard Oil Corp., which last week completed an estimated 12,000,-

000-foot gas discovery well on the L. T. Rhea heirs lands, about 12 miles northwest of Hamilton in the county of that name, has staked location for a well about 3,500 feet northeast of the discovery. Location is on the Julia Dawson lands in the B.B.B.&C. R.R. Survey No. 41. The first test was drilled with cable tools, but rotary equipment is being moved in on the second location. Total depth of the first test was 2,455 feet.

Deep Test for Cooke

Underman & Rips, of Tulsa, are planning on drilling a 6,000-foot test on the Walter England 48-acre tract in the Rama Dye Survey, 2 miles southeast of Woodbine near Timber Creek in Cooke County. Deep showings of oil across the river in Love County, Oklahoma, are no doubt responsible for such deep tests as this one being drilled and proposed for Cooke County, on the Texas side of the river.

Grayson County

The northwestern Grayson County deep test being drilled by the Olson Drilling Co. and others on lands of the Southwest Life Insurance Co., in the Jameson Survey, 6 miles northwest of Denison, reports having logged the top of Woodford Chert at 4,474 feet and top of Sylvan shale at 4,870 feet, and drilling around 5,000 feet in the latter formation. In shale cored at 4,876-91 feet, fossil graptolites were found to identify the latter shale formation. This is a matter of interest to geologists due to the fact that it is the first deep well in Texas to find this formation of the Oklahoma section. The Viola lime is expected at less than 100 feet deeper.

The test is located on a block of 22,000 acres, the drilling interests maintaining 10,000 acres of the original block, part of which has been sold to several major units, including Humble Oil & Refining Co., Phillips Petroleum Co. and Tide Water Oil Co. Elevation of the test is 767 feet.

There were 48 locations staked in the Wichita Falls district this week. Production ran a little above 62,100 bbls. per day during the week.

Consolidation

The King Royalty Co. of Wichita Falls and the Dixon Creek Oil Co. of Amarillo, both holding producing properties in the Panhandle district, have consolidated, the new company to be known as the King Oil Co. and to be headed by R. A. King, Wichita Falls. The company will own leases on 6,277 acres in the Panhandle district, the majority of which are to be operated by the company. It will also own 4,888 acres of producing leases in the North Texas district, part of which are jointly held by other companies or producers. The total number of wells owned by the company is 530 with a daily potential of 15,000 bbls., all being pumpers, the allowable set at around 2,800 bbls. per day. The company also has a number of gas wells, a refinery under lease to another company, gas and oil pipe lines located in the Panhandle district, and a number of tests drilling in various areas.

Panhandle District

Twelve locations were staked in the Panhandle district this week while at the same time 17 wells were completed, all producing either gas or oil.

WEST TEXAS COMPLETIONS

Completions in West Texas, with their sand records and initial production, were as follows:

Andrews County

Humble Oil & Refining Co. No. 7 Means, 4,202 feet, plugged back to 2,675 feet, cleaned out to 3,250 feet, 4,973,000 feet gas.

Crane County

Keyes and others No. 1 Hughes, dry and abandoned 2,409 feet.

Ector County

Landreth Production Co. No. 2-C Kloh, 4,230-4,253 feet, 514 bbls.

Gaines County

Wahlenmaier and others No. 1 E. H. Jones, elevation 3,528 feet, dry and abandoned 5,224½ feet.

Fisher County

General Crude Oil Co. No. 7 Glannigan, 3,083-3,109 feet, acidized, 400 bbls.

Howard County

Continental Oil Co. No. 14-A Settles, 2,345-2,393 feet, 60 bbls. per hour. Ennisbrook Drilling Corp. No. 8 Texas Land & Mortgage Co., 2,635-2,830 feet, shot with 600 quarts, 831 bbls. Sinclair Prairie Oil Co. No. 31 Dodge, 2,465-2,820 feet, shot with 700 quarts, 625 bbls.

Jones County

Danciger & Fortex Oil Co. No. 1 Dorsey, 2,434 feet, plugged back to 1,950 feet, elevation 1,635 feet, dry and abandoned. Ungren & Frazier No. 2-C Dorsey, 2,056-2,067 feet, 867 bbls. Humphrey No. 4 Dorsey, 2,208-2,212 feet, 1,276 bbls.

Mitchell County

Southern Union Production Co. No. 1 Castin, temporarily abandoned 35 feet, elevation 2,258 feet.

Pecos County

Cardinal Oil Co. No. 1-B Smith, 1,237-1,350 feet, acidized, 10 bbls. oil and 90 bbls. water per day, plugged back to 1,347 feet; No. 36-E Tippett, 457-520 feet, 57 bbls. H. A. Baker No. 1 Smith, 445-450 feet, 155 bbls. oil and 71 bbls. water. Stanolind Oil & Gas Co. No. 14-A Tippett, 361-420 feet, 99 bbls. oil and 25 bbls. water.

Upton County

Lucas No. 1 Lane, 2,148-2,177 feet, plugged back to 2,171 feet, acidized, 144 bbls. Texas Pacific Coal & Oil Co. No. 8-E Lane, 2,280-2,296 feet, acidized, 808 bbls. Farley No. 2-B Lane, 2,183-2,306 feet, plugged back to 2,301 feet, acidized, 157 bbls. Duffey and others No. 8 McClintic, total depth 3,000 feet, shot 420 quarts, 90 bbls.

Ward County

Atlantic Oil Producing Co. No. 6-B Bennett, 2,362-2,590 feet, plugged back to 2,432 feet, shot, 132 bbls. California Co. No. 22 York, 2,337-2,530 feet, shot, 324 bbls.; No. 18 Gordon, 2,414-2,525 feet, shot, 1,400 bbls. Empire Gas & Fuel Co. No. 1 Grimes, 2,340-2,530 feet, shot, 152 bbls. Richardson No. 27-B Johnson, 2,539-2,573 feet, shot, 1,238 bbls.

Winkler County

Emperor Oil Co. No. 1 Continental-Halley, 2,704-2,943 feet, plugged back to 2,933 feet, shot, 65 bbls. Westbrook Oil Co. No. 1 Halley, 2,718-2,924 feet, plugged back to 2,910 feet, shot, 332 bbls. Magnolia Petroleum Co. No. 15 Walton, 2,822-2,943 feet, shot, 378 bbls. Texas Pacific Coal & Oil Co. No. 10 Daugherty, 2,840-2,935 feet, shot, 1,098 bbls. Cherry and others No. 1 Central State Bank of Abilene, 2,821-2,878 feet, shot, 595 bbls.

PANHANDLE COMPLETIONS

Completions in the Texas Panhandle with their top of sand and total depth record and initial production were as follows:

Carson County

Phillips Petroleum Co. No. 5 Cooper, 2,981-3,016 feet, shot with 290 quarts, 362 bbls. on pump.

Gray County

British American Production Corp. No. 9 Phillips, 3,213-3,264 feet, shot, 631 bbls. Cambrian Oil Co. No. 4 Barrett, 3,140-3,236 feet, shot, 705 bbls. on pump. Continental Oil Co. No. 12 Finley, 2,940-2,989 feet, 630 bbls. on pump. Wilma Petroleum No. 1 McKinney, 3,285-3,286 feet, shot, 1,150 bbls. Magnolia Petroleum Co. No. 5 Haggard, 3,257-3,295 feet, shot, 322 bbls. on pump. Tharp and Dawson No. 1 Morse, dry and abandoned 2,640 feet.

Hutchinson County

Skatex Oil Co. No. 1 Moore, 3,038-3,085 feet, shot, 575 bbls. on pump; No. 4 Moore, 2,940-3,115 feet, shot, 810 bbls. on pump. Stanolind Oil & Gas Co. No. 1 Haile, 2,970-3.040 feet, shot, 409 bbls. on pump. Stekoll Oil Producer No. 3-E Whittenburg, total depth 2,977 feet, plugged back to 2,971 feet, shot, 54 bbls. oil and 50 bbls. water per day on pump.

Moore County

Canadian River Gas Co. No. 15-A Bivins, total depth 3,116 feet, 7,300,000 feet of gas.

Potter County

Canadian River Gas Co. No. 14-A Vivins, 2,365-2,559 feet, 40,000,000 feet of gas.

Wheeler County

Alma Oil Co. No. 14 Johnson, 2,425-2,488 feet, 39 bbls. Dumar Oil & Gas Co. No. 1 Slavik, 1,658-1,840 feet, 35,200,000 feet of gas. Palmer and others No. 1 Chilton, 1,923-2,095 feet, 18,400,000 feet of gas. Skelly Oil Co. No. 12 Johnson, 2,490-2,545 feet, 390 bbls.

NORTH TEXAS COMPLETIONS

North Texas field completions with their top of sand and total depth records and initial production follow:

Archer County

B. L. Albicht No. 1 E. Colgan, dry and abandoned 1,525 ft. L. T. Burns No. 7 M. B. Kolb, 1,222-1,241 feet, 25 bbls.; No. 8 M. B. Kolb, 1,227-1,249 feet, 10 bbls.; No. 1 J. J. Perkins B, dry and abandoned 1,055 feet. Burns & Burns No. 2 McCrory Y, dry and abandoned 615 feet. Fain-McGaha No. 4 Morrison, 1,327-1,332 feet, 100 bbls. Huggins Oil Co. No. 11 H. Ford, 641-650 feet, 15 bbls. W. T. Hutcheson No. 3 McCrory, dry and abandoned 606 feet. Kimbell & Bohner No. 3 J. D. Carpenter, 1,059-1,066 feet, 15 bbls.; No. 4 J. D. Carpenter, 1,061-1,067½ feet, 50 bbls. Petroleum Production Co. No. 18 J. T. Richardson D, 1,238-1,250 feet, 10 bbls. Vital Oil Co. No. 2 Richardson, 1,402-1,417½ feet, 75 bbls.

Baylor County

T. F. Hunter No. 1 J. H. Hampton, dry and abandoned 1,615 feet. Petroleum Production Co. No. 28 Portwood, 1,394-1,396 feet, 25 bbls. Ray & Staniforth No. 43 Portwood C, 1,351-1,354 feet, 300 bbls.

Cooke County

J. F. Hart No. 1 M. Gwyn, dry and abandoned 1,843 feet. F. W. Merrick, Inc. No. 9 J. W. Hess, 832-886 feet, 15 bbls. Mudge Oil Co. No. 10 Johnson, 1,084-1,146 feet, 35 bbls. Murray Investment Co. No. 5 Lee Rohmer, 950-953 feet, 15 bbls. Seitz-Comegys No. 4 A. W. Trew A, 1,106-1,206 feet, 75 bbls.

Montague County

Perkins & Cullum No. 5 N. J. Howard, 1,157-1,172 feet, 22 bbls.

Wichita County

J. E. Keller No. 3 McKinney, 794-797 feet, 6 bbls. W. B. Omohundro No. 2 S. P. Gibson, 1,825-1,857 feet, 100 bbls. Ray & Staniforth No. 1 Robinson B, junked 1920 feet.

Wilbarger County

Barkley Meadows No. 16 Waggoner C, 1,109-1,122 feet, 70 bbls. Deep Oil Development Co. No. 2 Waggoner, 1,855-1,863 feet, 25 bbls. Golding-Cochran No. 9 Waggoner C, 2,527-2,538 feet, 330 bbls. W. B. Hamilton No. 1 Waggoner, dry and abandoned 2,185 feet.

Jack County

Yell and others No. 1 Brannon, 291-299 feet, 3 bbls. M. Yell No. 1 Peterson, 352-366 feet, 4 bbls.

Throckmorton County

Petroleum Production Co. No. 1 Portwood J, dry and abandoned 1,423 feet.

Young County

R. H. Alexander No. 1 J. Haygood, dry and abandoned 752 feet. Alexander & Beavers No. 3 Hamilton, 888-902 feet, 20 bbls. Carl Petroleum Co. No. 1 Glass, dry and abandoned 1,257 feet. Duncan and others No. 3 Benson B, 906-915 feet, 10 bbls. L. G. Hawkins and others No. 11 Kirkland, 718-726 feet, 5 bbls. Hines and others No. 1 Kerr, dry and abandoned 1,205 feet. A. P. Nicholson No. 1 Brown, dry and abandoned 604 feet. Rathke Oil Co. No. 12 Graham, abandoned location. E. C. Reed No. 2 Watson B, dry and abandoned 602 feet. Underwood Drilling Co. No. 11 Campbell A, 860-888½ feet, 200 bbls. Underwood & Campbell No. 3 Campbell D, dry and abandonedd 975 feet. L. E. H. Oil Co. No. 3 Manning, abandoned location.

La.-Ark. Fields

(Continued from Page 84)

trustee, No. 1 Rath & Cartier, section 35-13-18, dry and abandoned at 2,203 feet. It is located in the vicinity of the lone producer from Nacatoch sand at 1,360-foot level, discovered more than a year ago.

Cass County, East Texas

This area, offsetting the Rodessa field in Caddo Parish, registered its third oil well during the past week United Gas Public Service Co. No. 2 J. R. Jones unit, Ben Murray Survey, made 73 bbls. per hour through one-half inch tubing choke from total depth of 5,985 feet, subsea depth of 5,774 feet. Tubing pressure registered 450 pounds and casing pressure 250 pounds. Top of saturated lime was logged at 5,960 feet. American Liberty Oil Co. No. 1 D. A. Maxie, John Collum Survey, logged base of massive anhydrites at 5,592 feet and is drilling at 5,634 feet.

Oklahoma Fields

(Continued from Page 77)

8-4s-3w, in the Healdton area, had pay sands at 1,030 and 1,060 feet, total depth 1,060 feet, pumped 27 bbls. of oil in 24 hours and was completed.

One new test in Carter County was started. Shell Petroleum Corp. No. 65 Franklin, SE NW NE section 8-4s-3w, was rigging up machine.

Sinclair Prairie Oil Co. No. 22 Million & Thomas, NW SW SE section 5-4s-3w, in the Healdton field, total depth 3,183 feet in gray shale, plugged back to 3,170 feet and was preparing to acidize. In the last six days it swabbed an average of 32½ bbls. of oil a day.

Marshall County

No wells were completed and only one new test was started in Marshall County. G. L. Priest No. 8 Cope-Sublett, SE SW SE NE section 1-8s-5, was a machine.

Southwestern Oklahoma

The largest producer completed in southwestern Oklahoma during the week was the Gulf Oil Corp. No. 3 Boucher, SE NW SW section 32-1-19w, in Jackson County. It had sandy lime at 2,603-23 feet, total depth 2,637 feet, and pumped 204 bbls. of 40 gravity oil in 24 hours.

J. C. Davis No. 1-A Adams, C NW SE section 20-1s-9w, in Cotton County, pumped 3 bbls. of oil a day and was completed. It was drilled to 2,278 feet, total depth, and when water intruded was plugged back to 2,259 feet.

Burns & Moore No. 1 Webster, NE cor. section 2-6-17w, wildcat west of the Gotebo district, had sand at 450-53 feet, total depth 458 feet. It pumped 5 bbls. of oil in 24 hours and was completed.

Brewer & Wagner No. 1 Allen, SE SW NE section 28-2-10w, in Comanche County, was abandoned at 1,006 feet, total depth, in red shale.

W. J. McAllester No. 3 Nigh, NE NE SW section 11-2s-8w, in Stephens County, had sand showing oil at 2,082-87 feet, but drilled into water and was dry and abandoned at 2,097 feet, total depth.

Magnolia Petroleum Co. No. 1 Woods, NE SE SW NE section 17-3-5w, in Grady County, was dry and abandoned at 2,774 feet, total depth, in shale. It was an old well deepened from 2,025 feet.

New work in southwestern Oklahoma was as follows In Stephens County, Louis Sikes No. 6 Mulkey, SE NE NE section 16-1s-8w, had built rig and was moving in tools. In Comanche County, J. E. Thweatt No. 1 Fahy, SE SW SW section 21-2-10w, was drilling with machine at 710 feet. In Jackson County, Gulf Oil Corp. No. 1 Byrd, SE SW NW section 14-1-20w, was a cellar.

California Fields

(Continued from Page 83)

and it should be ready for a production test in the near future as the 8⅝-inch water string was landed and cemented several days ago. In the Hermosa section of the Torrance field Sterling Oil Co. completed No. 1, in section 31-3-14, pumping 218 bbls. of 16.1 gravity oil per day from 3,902 feet, after the hole had been finished with a 6⅝-inch liner carrying 410 feet of perforated and which was cemented through perforations at 3,485 feet. The Standard's field department had an exceedingly busy time during the past week because in addition to finishing the wells already enumerated, the company completed No. 80 Baldwin in the Montebello field and put the finishing touches on another well in the Kettleman North Dome field.

Montebello

No. 80 Baldwin of the Standard Oil Co. in the Montebello field of Los Angeles Basin was brought in flowing 100 bbls. of 25.3 gravity oil per day following completion at 3,767 feet after the hole had been plugged back from 3,850 feet and finished with a 6⅝-inch liner including 411 feet of perforated. The oil is cut. The Standard is running five additional strings of tools on the Baldwin lease in the Montebello field, Nos. 83 and 84 having been spudded in within the past 15 days. The Union Oil Co. finished an excellent well in the Santa Fe Springs field when No. 29 Alexander was brought in flowing 464 bbls. of clean 34.6 gravity oil per day through a three-quarter inch bean. It was bottomed at 5,895 feet, and finished with a 6⅝-inch liner including 31 feet of perforated. The General Petroleum Corp. No. 44-A Santa Fe showed small production following completion at 4,624 feet. It was brought in pumping 125 bbls. of relatively clean 35.1 gravity oil per day after the hole had been finished with a 6⅝-inch liner carrying 542 feet of perforated. Continental Oil Co. has picked up the pay in No. 38 Bixby in the Seal Beach field of Los Angeles Basin and is rotating ahead in oil sand at 5,268 feet. The Standard Oil Co. is rigging up rotary drilling equipment on No. 27 San Gabriel in the same field and this well should be spudded in before the close of the month. The Universal Consolidated will soon start drilling No. 1 Pasadena, in the eastern extension of the Montebello field. St. Helens Petroleum Co. is erecting rig for No. 7 P.&B. in this area. It will be drilled in the corner of the lease in the hope of being able to intercept the edge of either the Cruz or Nutt zones. The Richfield Oil Co., which secured two leases in the eastern extension of the Montebello field following settlement of litigation with the Universal Con-

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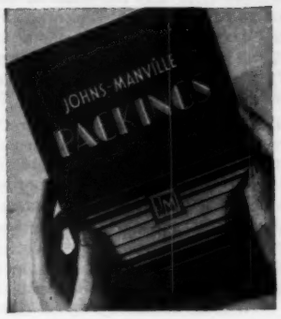

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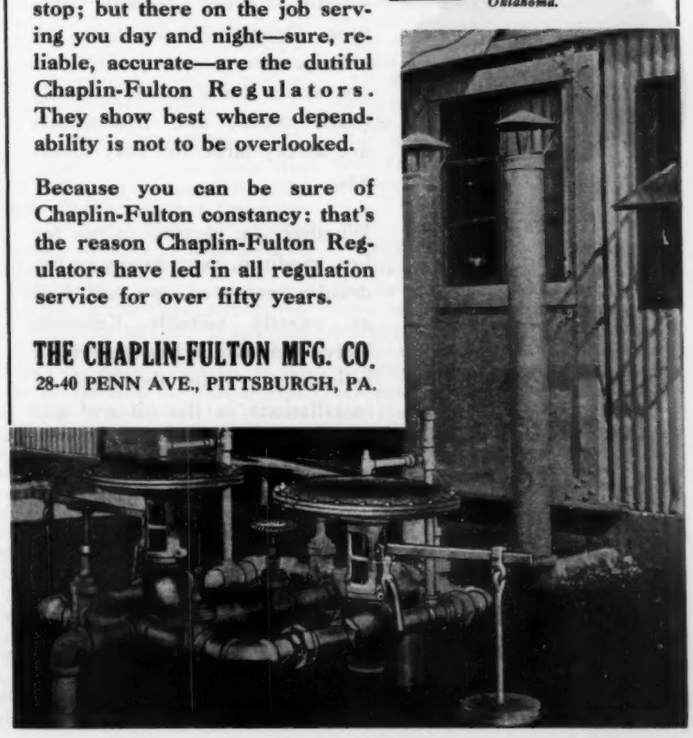

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solidated, has already spudded in No. 1 Ciocca and is building rig for another, No. 1 Nutt. In the Kettleman North Dome field, the Kettleman North Dome Association finished No. 54-24-H and this new producer was brought in flowing 1,390 bbls. of clean 33.1 gravity oil and 880,000 feet of gas per day from 8,838 feet after the hole had been finished with 6⅝-inch casing landed at 8,782 feet. This well was killed soon after completion in order to permit the landing of a 4½-inch liner but should be back on production again within another few days.

Rocky Mountain Fields

(Continued from Page 88)

sec. 18-27-4w. T.D. 1,710 ft.; fishing for tools.

Norden Corp., Ltd., No. 1 Hollan, NW SW NW sec. 12-28n-6w. Resuming at 583 ft.

Toole County

A. E. Crumley No. 8 Shaw, SE NW SE sec. 35-36n-2w. Drlg. 250 ft.

UTAH

The Ramsey Petroleum Corp., which made an important gas discovery on the Last Chance-Starvation Creek structure in Emery County last year in its No. 1 Weightman-Senior, NE SW section 18-26s-7e, will return to that area this spring to carry on development according to advices from Los Angeles headquarters of the American Oil Corp., which is closely identified with the operation. The discovery well was drilled to 3,168 feet, being bottomed in the Permian. Hole was too small to continue to further depth. The well produced 4,000,000 feet of wet gas a day at 2,698 feet and 21,000,000 feet at 2,775 feet and had good oil shows at 2,800 and 3,071 feet.

M. C. Elbert of the American Oil Corp. says that they were encouraged by the showings in this well and the hydrostatic control of the structure, and were not able to test the Pennsylvanian and Mississippian, which were the objectives, but now plan to drill an offset. Rotary equipment will be used and gas from the present well will be used for fuel and water from a water well to be drilled nearby. The discovery was drilled with standard tools. Water was hauled 6 miles and fuel 12 miles.

Further development of the gas zone will be undertaken to supply the project of the Bohn Corp. and the Ford Motor Co., who are jointly developing a large alunite deposit at Marysville.

Grand County

Columbia Crude Co. No. 1 Rath, SW SE sec. 12-25n-20e. S.D. 125 ft. (corrected).

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22n-22e. Drlg. 3,200 ft. in red beds.

Glenn Ruby et al No. 1 State, NE SE SE sec. 34-31s-16e. Drlg. 800 ft.

Washington County

Arrowhead Pet. Corp. No. 1-A, SE SW NE sec. 1-43s-15w. Drlg. 2,418 ft.; hole full of water; 6¼-in. at 1,409 ft.

Kansas Fields

(Continued from Page 70)

of oil and 150 bbls. of water in 24 hours and was completed.

New work in Greenwood County follows: Barbara Oil Co. No. 17 Pixley, NE NW SW section 8-22-10, machine; Western Kansas Oil & Refining Co. and Phillips Petroleum Co. No. 1-A Pees, C N half N half SE section 30-22-11, location; George Watterhold No. 1-B Lewis, SW SW NE section 25-27-8, drilling at 450 feet.

Michigan Fields

(Continued from Page 72)

feet. Only two other tests were active in the township. Pure also struck a natural initial of 230 bbls. in the No. 2 Clark heirs, C S half SW NE section 2-13n-2w, Jasper Township, Midland County, at 3,433 feet, but it was to be treated with acid before tying into the line.

Pure No. 1-C Iva E. Bond, C N half NW NE section 12, Jasper Township, ran casing at 3,409 feet and will drill in this week.

Gratiot Oil & Gas Co. was still testing its No. 1 Ruby Greene, SW NE NE section 13, Jasper Township, reported good for 25 bbls. a day when drilled in recently. It has been placed on the pump.

Beaverton—Gladwin

The largest initial producer in the Beaverton Township, Gladwin County pool, was completed last week when Smith Petroleum Co. No. 2 Mae E. Fruchey, NW SE SW section 2-17n-2w, flowed 245 bbls. during the first 12 hours and was rated good for 300 to 350 bbls. a day. Dundee was topped at 3,830 feet and the well drilled to 3,898 feet.

Ogemaw County

Three tests were reported completing in two Ogemaw fields, namely West Branch and Mills Township sections.

Morris-Barnes Oil & Gas Syndicate has cleaned out No. 4 Golf Course, SW NE SW section 20-22n-2e, West Branch Township, and was preparing to place on the pump. Dundee was topped at 2,549 feet and drilling completed at 2,723 feet.

Drilling had been about completed in the Weber Oil Co. No. 3 Boeing Estate, SW SW SE section 26, same township, with operators preparing to give it an acid treatment.

Mills Oil, Inc., No. 1 Jaqua, NW NE SW section 6-21n-3e, also was completing in the Dundee. Sun Oil Co. is drilling deeper its No. 2 State, NW SE NE section 1-21n-2e, Horton Township, after failure to find commercial production in the Traverse. Shale was topped at 1,696 feet with a show of oil, gas and water at 1,815 feet in a section of the field where there have been several large Traverse producers during the past year.

Operations in Ogemaw are being resumed more slowly as winter weather hung on longer than in other sections of the state.

Birch Run—Saginaw

Natural initial of 7 bbls. a day was increased to 12 bbls. in the No. 1 William J. Smith well, SE NE NW section 20-10n-6e, Birch Run Township, by the Smith Petroleum Co., principal developers of the eastern Michigan field. Berea sand was topped at 1,524 feet and the hole drilled to 1,545 feet.

Smith Petroleum started a deep test carrying its No. 1 Morse-Getty, NW SW NE section 20, toward the Dundee. It was previously completed in the Berea in January as one of the latest of the company's 20 or more tests in the field.

Isabella County

McClanahan Oil Co. and Burks White were expected to drill their No. 1 Lawrence Hafner, C SE NW section 22-16n-3w, a Wise Township, Isabella County, wildcat, into the Dundee early this week. They had reached a depth of 3,370 feet.

Southwest Texas Fields

(Continued from Page 80)

velopment of the field is proceeding at a swift pace. To the west, in the Saxet field, a 4,700-foot west outpost test, Morgan Gulf Oil Co. No. 1 Morgan, tested 3,200 feet of oil from 20 feet of sand. The test is bottomed at 4,085 feet. Three producers were completed in each of these Nueces County fields. In San Patricio County three producers were added to the Plymouth field, while new tests were being projected for the Taft area, recently redeemed by the completion of Humble Oil & Refining Co. No. 1 Mayo. That company is moving back on the No. 1 Godwin, abandoned at 6,352 feet to rework the test. Production in the Mayo well was found in sand around 3,975 feet. Humble will also drill a test on the south edge of the Plymouth field in section 35 of the fourth addition of Taft Farm Lands Subdivision.

Nine wildcats are drilling in these two counties. One test Stanolind Oil & Gas Co. No. 1 Floerke located 4½ miles southeast of the Taft field was abandoned at 6,511 feet.

Drilling Contractors

(Continued from Page 71)

San Patricio County to north central Duval County, where it will drill a wildcat test in section 559 for the Stanolind Oil & Gas Co. The rig was moved from a 6,500-foot wildcat test drilled by that company southeast of the Taft field. Other Buchanan rigs are drilling for Benedum & Trees Oil Co. and Plymouth Oil Co. in San Patricio County, and for Humble, Shell, Mid-Continent, Texas Co. and Blanco Oil Co. in the Loma Novia and Seven Sisters fields of Duval County.

Loffland Brothers completed Continental Oil Co. No. 1 Ardoin in the Tepetate field and have reached interesting depths on two wells for themselves, located on the east side of the field. Two active rigs are located on the seadrift prospect in Calhoun County and the Citrus Grove prospect in Matagorda County, both of which are being drilled for Continental Oil Co.

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Eastern Field Report

FLOODS FOLLOW DEEP SNOW IN SLOWING EASTERN FIELDS

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Mar. 21.—Reports of 14 completions in the lower eastern fields were received in the past week. Ten were gas wells, three were oil wells with an initial production of 215 bbls. and one was a dry hole. The new oil production was mostly in Southeast Ohio.

SOUTHEAST OHIO

Undoubtedly Southeast Ohio will get more than its share of the record-breaking flood in the Ohio River Valley as the Muskingum River is backed up over the cities. Before all service was interrupted, four completions were reported. In Athens County, the Ohio Fuel Gas Co. completed its No. 6,061 on the Sunday Creek Coal Co. lease in the SW section 36, Trimble Township. It was drilled in the Berea sand at a depth of 1,185 feet and is a gas well gauging 100,000 feet a day.

In Coshocton County, a fair producer was completed by the Preston Oil Co. on the William Frazee No. 2 lease in New Castle Township. It is a Clinton sand well at a depth of 3,195 feet and produced 120 bbls. the first day after shot.

In Licking County, the Pure Oil Co. completed a second test on the Paul J. Primrose farm in the SE quarter section 17, Hanover Township. It was drilled in the Clinton sand at a depth of 3,175 feet and produced 90 bbls. the first day after shot.

In Meigs County, Leroy Holmes and others completed a second test on the Wilber Bradford farm, Lot 1,179, Lebanon Township, in the Berea sand as a gas well at 2,037 feet. It gauges 750,000 feet a day.

WEST VIRGINIA

The Salt Rock district in Cabell County affords the most interest in the number of good wells completed. It is being drilled extensively and the wells are all more than fair. Little new production is being brought in. During the week but one producer was completed. In Roane County, the Henderson Oil Co. completed a second test on the C. J. Burdette farm in Curtis district in the Second Cow Run sand at a depth of 983 feet. It is showing for 5 bbls. a day.

Gas Wells

In Boone County, the United Fuel Gas Co. completed No. 4,582 on the Horse Creek Coal Land Co. lease in Scott district as a gas well gauging 300,000 feet a day. The Big Lime was at 1,637-1,855 feet; the Big Injun sand at 1,858-93 feet; the Berea sand at 2,331-57 feet and the gas at 2,334-46 feet.

In Cabell County, four gas wells were completed. The largest was Pridemore & Adkins No. 2 Lucas heirs, and it gauges 6,485,000 feet a day. The Big Lime was at 1,081-1,236 feet; the Big Injun at 1,300 feet and the well was shut down at 1,307 feet with the top of the gas at 1,302 feet. This is in McComas district. In the same district, the depths on the W. Carter and others lease reported last week were: Big Lime 1,060-1,232 feet; Big Injun 1,232-83 feet with the 3,700,000 feet of gas at 1,273-83 feet.

In this district, the Kentucky, West Virginia Gas Co. completed two tests. On the W. E. Farley and others lease, the Big Lime was at 1,277-1,431 feet; the Big Injun sand at 1,487-94 feet with 1,800,000 feet of gas showing at 1,490-93 feet. On the R. N. Heath farm, the Big Lime was at 1,297-1,472 feet; the Big Injun sand at 1,515-70 feet; the Berea sand at 2,081-93 feet; the Brown shale at 2,510-3,244 feet with 308,000 feet of gas at 2,515-2,969 feet.

In the same district, R. H. Adkins and others completed a test on the R. L. Johnson farm at a total depth of 3,609 feet. The Big Lime was at 1,275-1,440 feet; the Big Injun sand at 1,494-1,576 feet; the Berea sand at 2,037-50 feet; the Brown shale at 2,972-3,250 feet with 183,600 feet of gas at 3,000-3,200 feet.

In Logan County, the Boone County Coal Co. completed its No. F-6 on its own property in Logan district at a depth of 3,138 feet. Here, the Big Lime was at 2,424-2,592 feet; the Big Injun sand at 2,592-2,660 feet; the Berea sand at 3,108-38 feet with gas showing at 2,474-76 feet, 2,916-21 feet, and 3,115-38 feet. The total gauge is 1,764,000 feet a day.

In Pleasant County, the Dunn Oil Co. drilled a test on the C. C. Kelley farm in Grant district through the Berea Grit to a depth of 1,472 feet and it was a dry hole.

In Wayne County, V. L. Lusher completed a test on his own property in Union district at a depth of 3,225 feet. The Big Lime was at 1,422-1,570 feet; the Big Injun sand at 1,665-98 feet; the Berea sand at 2,213-26 feet; the Brown shale at 2,686-3,225 feet with gas gauging 603,000 feet a day, in the last formation.

In Wetzel County, Null and Moorhead completed a test on the F. Himelrick farm in Church district at a depth of 3,150 feet. The top of the Bayard sand was at 3,136 feet with gas showing at 3,138-40 feet. It will make a small well.

Deep Tests

In Malden district Kanawha County, the test of Godfrey L. Cabot, Inc., on the N. B. Tompkins farm, reported as a 500,000-foot gas well in the Oriskany sand at a final depth of 5,097 feet, was shot and the volume increased to 2,500,000 feet a day. This operator has made a location for a second test on this farm situated 2,327 feet south 20 degrees east of the No. 1. This operators test on the William B. Tompkins farm is drilling at 4,830 feet. The No. 9 on the Campbells Creek Coal Co. lease is down 1,062 feet and the rig has been completed for the No. 10. The United Carbon Co. has started building a road to its location for a test on the J. Q. Dickinson farm.

In Elk district, the Columbian Carbon Co. is down 4,816 feet in the No. 4 on the G. and D. Copenhaver farm which appears to be drilling in the Oriskany sand with no report of gas. The subsea elevation of the Oriskany sand in the No. 1 was 4,020 feet; the No. 2 was 4,003 feet and was the largest well in the state, and the top of the Oriskany in No. 4 should be subsea 4,021 feet, or a total depth of 4,816 feet. No. 3 is drilling at 4,400 feet. This company also has the following wells drilling: On the W. L. Burdette farm at 4,850 feet; on the W. H. Baxter and others lease shut down at 4,650 feet; on the M. M. Robertson farm at 3,000 feet; on the Elkland Improvement Co. tract at 1,500 feet. V. C. Smith and others are continuing to deepen the test on the island at the mouth of Coopers Creek below the Oriskany sand and have reached 5,360 feet. The Yoak Oil & Gas Co. has the rig standing for the No. 2 on the Goshorn heirs farm. Benedum & Trees are rigging up the No. 2 on the Mary C. Wingfield farm.

In Loudin district, Godfrey L. Cabot, Inc., is drilling at 773 feet in the No. 2 on the Kanawha Land Co. lease. The United Carbon Co. is down 1,475 feet in a test on the C. C. Dickinson farm. In Poca district, W. O. Zeibold and others reached a depth of 4,122 feet on the D. A. Griffith farm and shut down.

Other Operations

In Cabell County, the Shale Gas Co. is rigging up a second test on the Charles Morrison farm in Grant district. Its No. 1 Mary and Walter Johnson is drilling at 2,765 feet. In McComas district, the Sue Gas Co. is rigging up a second test on the Gill estate on the Guyandotte River. The Waggoner Gas Co. is spudding in on the J. D. Bias farm. The Holton Gas Co. made a location on the L. E. Adkins farm on Lials Branch. The West Virginia Gas Co. is moving in the tools on the E. J. Nichols farm on Smith Creek. The Homer Gas Co. is down 1,170 feet on the Homer Woodall farm. The Fairfax Gas Co. has reached a depth of 2,875 feet in No. 3 Leonard Paugh. The Hillcrest Gas Co. is drilling at 725 feet in No. 2 Elsie D. McComas.

In Calhoun County, Massey & Jarvis are rigging up on the C. B. Parsons farm in Washington district. Jeff Miller made a location on the H. G. Brannon and others lease. The Southeastern Gas Co. has started drilling the second test on the Amos Smith farm in Lee district. In Sherman district, K. M. Hunt and others are drilling at 2,300 feet on the Brad Gainer test.

In Gilmer County, the McCall Drilling Co. has a rig up for a test on the E. J. James heirs farm in Center district. In DeKalb district, the Friendly Oil & Gas Co. is hauling in material for the test on the Gainer and Kuhl lease.

In Lincoln County, W. C. Kingery and others are down 1,235 feet on the M. F. Brown farm in Sheridan district. In this district, the Empire State Gas Co. has a location on the Sarah E. Midkiff farm. In Washington district, the Harvard Gas Co. is down 1,535 feet in the No. 4 on the Lincoln Mineral Co. tract. In Union district, the United Fuel Gas Co. has spudded in and started drilling the No. 4,606 on the James M. Egnor farm.

In Ritchie County, the King Knob Oil & Gas Co. has started deepening the No. 1 on the William Hill farm in Murphy district. In this district, Shannon Dawson and others are spudding in a test on the Spencer Wilson farm. In Grant district, Hill and Kuhn have a rig standing for a test on the M. C. Rosson farm on Gillespie Run.

In Roane County, L. C. Young and others are drilling a test on the B. Fritz Kee farm of 167 acres on Flat Fork in Harper district. L. L. Reed and others have a location for a test on the Joseph Fields and others farm on the same stream. In Smithfield district, the Linden Drilling Co. is down 830 feet in a test on the Thaniel Ferrell and others lease.

In Wayne County, V. L. Lusher has a rig standing for a second test on his own property in Union district. The Ceredon Gas & Development Co. is drilling at 810 feet on its property in Ceredo district.

South America

The 1936 edition of "South American Handbook" is now available and like its predecessors gives very complete information for the trader or traveler on all Latin American countries. Much improvement has been made in many of these South American countries during the past year and they are recorded in this new handbook, as well as statistics of trade and industry and information about crops.

Each country is described in detail and particular attention is given to descriptions of towns and cities of interest to those who might contemplate visiting these countries. Hotels are listed and general information about the people and how to get from place to place is given.

The book sells for $1 postpaid and may be secured from the H. W. Wilson Co., 950-72 University Avenue, New York City.

WILDCAT OPERATIONS

OKLAHOMA WILDCATS

Week Ending March 21

NORTHERN OKLAHOMA

Alfalfa County

Tex-O-Kan. Oil Co. No. 1 Acre. C SW NE sec. 14-24-11w. Sylvan shale 7,065 ft.; Wilcox sand 7,259 ft.; Schlumberger test showed porosity at 5,910 ft. and at 6,400-6,500 ft.; T.D. 7,325 ft.; conditioning hole.

Beckham County

Carter Oil Co. No. 1 Davidson, C NW SW sec. 2-9-25w. Rig.

Wood Pet. & Royalty Corp. No. 1 Blair, C NW SE sec. 32-9-26w. Drlg. 2,550 ft.

Caddo County

Denver Prod. & Ref. Co. No. 1 Sah-Can C SE SE sec. 33-10-10w. Ran whipstock to 7,900 ft.; to drill out.

H. W. Lee et al No. 1 Horton, NE cor. Sec. 9-6-3w. S.D. at 2,001 ft.

Cleveland County

Hall-Briscoe, Inc. No. 1 Fant, S./ SW NE sec. 27-10-2w. S.D. at 7,511 ft.

Coal County

Shell Pet. Corp. No. 2 Hill, SE SE NW sec. 30-3-10. Sand 1,520 ft.; McAllister series 1,600 ft.; Atoka shale 2,380 ft.; drlg. 4,636 ft.

Comanche County

N. E. Milling No. 1 Miller, NE NE SW sec. 23-4-12w. Drlg. 752 ft.

Geo. Pace et al No. 1 Spencer, SW cor. SE sec. 21-3-10w. T.D. 4,164 ft. in Granite wash; P.B. to 1,850 ft.; re-cmtd. hole from 1,852 ft. to 1,654 ft.; moved out tools; S.D.

Garfield County

Herndon Drlg. Co. et al No. 1 Branson SW SW SE sec. 23-24-3w. Drlg. 4,235 ft.

W. J. Sherry et al No. 1 Haken. NW NW SW sec. 32-20-10w. Layton 4,520 ft.; Oswego 5,585 ft.; fsg. 5,883 ft.

Stanolind O. & G. Co. et al No. 1 Brunken SW SW NE sec. 32-23-4w. Drlg. 5,019 ft.

Garvin County

Chas. E. Carter et al No. 1 Wood, NW SW SE sec. 5-4-3.
Old T.D. 2,405 ft.; to deepen.

Baggett & McElreath No. 1 Hyre, NE NE SE sec. 23-3-1w. Ran Schlumberger 4,-501 ft.; T.D. 4,650 ft.; to deepen.

Hughes County

Brady Oil Co. No. 1 Culver, NE SE NW Sec. 28-7-9. Location.

W. P. Canavan No. 1 Meadors, SE NE SE sec. 5-8-10. Gilcrease 2,600 ft.; Wapanucka 3,050 ft.; Cromwell 3,058 ft.; sands 3,130 ft. and 3,180 ft.; slight showing of oil; T.D. 3,196 ft.; P.B. 3,168 ft.; shot; testing.

Fitzpatrick et al No. 1 Cotton, SE SE NE sec. 13-8-8. Bldg. rig.

M. H. Halsey No. 1-A Eustep, NW NW SW sec. 11-8-9.
Wapanucka 3,428 ft.; Cromwell 3,452 ft.; T.D. 3,464 ft.; 2 bailers wtr. an hr.; P.B. and shot, 3,038-45 ft.; est. 10,000,000 ft. of gas; P.B. to 3,412 ft.; re-shot.

Phillips Pet. Co. No. 1 Eberle, NE NE SW sec. 12-5-9. Drlg. 2,840 ft.

Schumacher et al No. 1 Schumacher, NW NW NE sec. 23-5-10. T.D. 1,780 ft.; S.D.

Sivalls et al No. 1 Montgomery, NW SW NW sec. 7-9-9. Drlg. 2,300 ft.

Kay County

Black Gold Pet. Co. No. 1 Cooley, NE NW SW sec. 25-28-4e. Sand 1,395-1,450 ft.; T.D. 1,535 ft.; 8-in. casing collapsed.

Kiowa County

Burns & Moore's No. 1 Webster, C NE NE sec. 2-6-17w.
Sand showing oil at 459-53 ft. and 465-58 ft.; T.D.; pumped 22 bbls. in 4 hrs.; comp. as 5-bbl. pumper.

W. C. Adams et al No. 2-A Stone, C SE SE NE sec. 24-7-17w.
T.D. 1,193 ft.; machine moved out.

J. C. Shaffer et al No. 1 Slusher, NW SW NW sec. 35-7-17w. T.D. 1,955 ft.; est. good for 5 bbls.; P.B. to 955 ft.; acidized and shut in.

Lincoln County

Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Crawford, NE NE SE Sec. 25-15-2. First Wilcox 5,110 ft.; second Wilcox 5,218 ft.; T.D. 5,242 ft.; P.B. 5,-150 ft.; acidized; flowed 20 bbls. oil per day.

Logan County

R. H. Pierce No. 1 Kihega, SW cor. sec 7-17-1. Wilcox 5,132 ft.; slight S.O. and salt 5,122-34 ft.; T.D. 5,142 ft.

Stanolind O. & G. Co., Amerada Pet. Corp. and Eason O. & R. Co. No. 1 Gragg, SW SW NE sec. 20-18-4w. Cored 6,063 to 6,122 ft.; 35,000,000 ft. gas per day; 12 bbls. gasoline per hr.; S.I.

McClain County

Arab Pet. Corp. No. 1 Autry, NW cor. sec. 16-7-3w. Circulating at 8,040 ft. with oil; D.P. stuck.

McIntosh County

Indian Ty. Ill. Oil Co.'s No. 1 Tancred. 1,050 ft. S and 390 ft. E of C. Sec. 9-9-14. Gilcrease sand, 2,695-2,732 ft.; 20,000,000 ft. of gas; Cromwell 3,608 ft.; drlg. 3,-658 ft.

Oklahoma Oil Corp. No. 1-A Wolf, SE SW SE sec. 35-12-17. Gas sand 800 ft.; dry sands 1,200 ft. and 1,400 ft.; set 6-in. csg. at 2,667 ft.

Noble County

Continental Oil Co. No. 1 Pruitt, NW SE SW sec. 19-20-1w. Drlg. 2,000 ft.

Okfuskee County

Manahan & Grisso No. 1 Dalton, SE SE SE sec. 36-10-8.
Senora sand 1,723 ft.; T.D. 1,763 ft.; flowed 75 bbls. oil first hour after shot; flowed 225 bbls. in 7 hrs., and 203 bbls. in 9 hrs.; lost 4 hrs. while cleaning out.

Oklahoma County

H. R. Hollenback et al No. 1 Cooper, NW NW NE sec. 15-11-1. Drlg. 200 ft.

Sinclair Prairie O. & G. Co. No. 1 Corbett, NE NW NE sec. 17-13-3w.
Washed clean and acidized; flowed 17½ bbls. "gasoline" and 3,000,000 ft. of gas in 24 hrs.; T.D. 6,547 ft.

Osage County

Elfred Beck No. 1 Osage, SE SE NE sec. 16-23-7. Mach.

Midco Oil Corp. et al No. 1 Osage, NW NW SE sec. 11-23-6. Loc.

Payne County

Denver Producing & Ref. Co. et al No. 1 Pratt, NW cor. sec. 20-18-3. Rig.

Pittsburg County

Vaughn Prod. Co. et al No. 1 Chunn, 990 ft. N and 614 ft. W of C sec. 29-4-14.
S.D. 1,170 ft.; recovered all drill pipe; tools moved out.

Pontotoc County

Gulf Oil Corp. No. 1 Emry, SW SW NE sec. 15-2-6. Red granite 6,574 ft.; T.D. 6,600 ft.; D.&A.

Mid-Texas Pet. Co. No. 1 Whitney, SW SW SE sec. 30-5-4. T.D. 1,946 ft.; swbd. 100 bbls. oil in 12 hrs.; preparing to pump.

Sandback et al No. 1 Sands, NE NE NE sec. 20-3-5. Drlg. 167 ft.

Pottawatomie County

Gulf Oil Corp. No. 1 Bois-Clark, SW SE SE sec. 21-6-4. Rig.

Ross Oil Co. et al No. 1 Sparkman, SE NE sec. 33-8n-4e.
C.O. 3,915 ft.; shot at 3,871-90 ft.; swbd. 250 bbls. in 24 hrs.; acidized.

Roger Mills County

J. L. Shaw No. 1 Illinois Life, NW SE NW sec. 1-4-5. Drlg. 496 ft.

Seminole County

Amerada Pet. Corp. et al No. 1 Community, NE NE SW sec. 3-10-5. Drlg. 3,020 ft.

Imperial Drlg. Co. No. 1 Aldridge, SW NE NW sec. 32-9-8. Rig.

Sinclair Prairie Oil Co. et al No. 1 Harrison, NE NE NW sec. 17-8-3. Loc.

Felmlee & Nichaelson No. 1 Belford, SE NW NE sec. 15-9-8. Sd. 1,460-1,505 ft.; S.O.&G.; S.D. 1,680 ft.

Wynona-Jarvis-Holm No. 1 Horton, NE SW NE sec. 18-7-8. Drlg. 3,232 ft.

Washita County

L. P. McWhirter's No. 1 fee, SW cor. Sec. 34-8n-19w. S.D. 1,380 ft.

SOUTHERN OKLAHOMA

Atoka County

Phelps & Coats et al No. 1 Fidelity Life Ins. Co., SE SW NW sec. 23-1s-12. Drlg. 465 ft.

Vierson et al's No. 1 Williams, NE SW NW sec. 34-2s-10. Produced 100,000 ft. of gas at 4,100-15 ft.; drlg. 4,150 ft.

Bryan County

Wayne King No. 1 Kimbell, C E½ NE NW sec. 36-9s-9e. Sand 869-870 ft.; T.D.; waiting for casing.

Carter County

Carter Oil Co. No. 1 Carter-Williams, SW NE SW sec. 27-2s-3w. T.D. 8,088 ft.; flowed 10,000 bbls. of oil in 24 hrs.; T.D. 8,030 ft.; setting 7-in. pipe.

Carter Oil Co. et al No. 1 Leon Voorhees, C SE SW sec. 34-5s-2w. R.U.R.

Southern States Oil Dev. Co. No. 1 Moore, NE SE NW sec. 30-4s-1w. S.D. 1,155 ft.

Texas Co. No. 1 Cathey, SE NE NE sec. 6-5s-1w. T.D. 4,164 ft.; pumped 85 bbls. in 6 hrs.; 85 bbls. in 8 hrs.; 45 bbls. in 8 hrs.; drlg. 4,175 ft. in sh.

Cotton County

Grace & Woods No. 1 Henderson, NE SE SW sec. 27-4s-11w. Drlg. 1,388 ft.

Harmon County

Lloalko Trust, Ltd. No. 1 Crosnoe, SE SE SW sec. 14-3n-25w. M.I.T.

Jackson County

C. P. Burnham No. 1 Oliver, NW NW SE sec. 26-1-20w. Drlg. 668 ft.

A. H. Jackman No. 1 fee, SW SW SW sec. 27-1s-24w. U.R. at 2,355 ft.

H. W. Lee No. 1 Wright, NE NW SE sec. 19-1-19w. Location.

Universal Oil Co. No. 1 R. W. Briscoe, NW SW NE sec. 36-1s-20w. S.D. 1,550 ft.

Jefferson County

A. T. Campbell No. 1 Trout, SE NE NE sec. 6-8s-7w. Sd. 1,525-57 ft.; showing oil and wtr.; cg.

L. C. Hydrick No. 1 Peoples National Bank, SW SW SW sec. 26-6s-5w. Loc.

Geo. Pace No. 1 Gardner, SW cor. sec. 23-5s-5w. Drlg. 2,359 ft.

Sinclair Prairie Oil Co. No. 1 M. H. Barrett, NW cor. sec. 31-5s-6w. Top Arbuckle lime 3,668 ft.; T.D. 4,355 ft.; S.D.

Johnston County

Equitable O. & G. Co. No. 1 Bellsey, NE SW sec. 12-2s-4e.
Arbuckle lime 1,552 ft.; drlg. 1,938 ft. in lime.

Magnolia Pet. Co. No. 1 Welch, NE cor. sec. 12-2s-7. Bldg. rig.

Moore & Wirick No. 1 Westheimer & Daube, SE NW NE sec. 19-3s-4e.
T.D. 1,925 ft.; M.I.R.T.

Le Flore County

McCraw et al No. 1 Tidwell, C NW SE sec. 17-3n-22.
T.D. 1,555 ft.; S.D.

Love County

Amerada Pet. Corp.'s No. 1-A Westheimer & Daube, SW SE SW sec. 27-6s-2e. T.D. 6,797 ft.; set 8⅝-in. csg., 5,015 ft.

J. B. Russell et al No. 1 Scott, SW SE SW sec. 29-8s-2e. Drlg. 4,475 ft.

Sinclair Prairie Oil Co.'s No. 1 Stockton SE SE SW sec. 26-6s-2w. T.D. 6,914 ft.; sd. 6,890-6,909 ft.; 2,500 ft. O.I.H.

Marshall County

Norman Smith No. 1 Chestnut, NE cor. sec. 23-8s-5e.
T.D. 390 ft.; S.D. for csg.

Pushmataha County

C. W. Whitehead et al No. 1 Misser, SE SW SW sec. 35-3s-18e. T.A.; T.D. 3,560 ft.

Stephens County

W. G. Endicott et al No. 1 McFatridge, NW NW SW sec. 11-3s-9w. Drlg. 830 ft.

Clyde Rhodes et al No. 1-A Doak, SW SW SW sec. 1-1s-5w. T.D. 1,514 ft.; S.D.

Tillman County

Gulf Oil Corp. No. 1 Wearmouth, SE NW SE sec. 21-1s-18w. Set 7-in. csg. 3,271 ft.; T.D. 3,395 ft.

KANSAS WILDCATS

Week Ending March 21

(Descriptions are East unless marked otherwise)

Barton County

Arch E. Merriam No. 1 Soeken, SW SW SE sec. 21-17-11w. Fshg. 350 ft.

Buchanan & Alexander No. 1 Langfeld, NE NE SW sec. 14-20-11w. Drlg. 2,225 ft.

Davison et al No. 1 Birzer, SW SE SW sec. 22-17-12w. Cellar.

Hilligoss et al No. 1 Schmidt, NE cor. sec. 27-19-11w. Drlg. 2,440 ft.

George W. Hinkle No. 1 Smith, SW NW NW sec. 1-17-11w. Drlg. 1,960 ft.

Morgan & Flynn et al No. 1 Amerine, NE cor. sec. 14-19-14w. T.D. 3,668 ft.; D.&A.

Morgan & Flynn et al No. 1 Zimmer, SE SE SW sec. 20-19-14w. Drlg. 2,400 ft.

Murphy & Morgan No. 1 Robinson, NE NE SW sec. 21-16-14w. Drlg. 2,255 ft.

National Ref. Co. No. 1 McLean, SW SW SE sec. 25-17-11w.
Location.

Roy Ramsey et al No. 1 Hunt, NW cor. sec. 10-18-11w. Drlg. 1,720 ft.

Schermerhorn Oil Co. No. 1 Hunter, NE cor. sec. 29-18-15w. Location.

Simpson & Noble and Atlantic Oil Producing Co. No. 1 Hiss, C NW NE sec. 31-20-13w. Spudded and S.D.

Torry & Feaster No. 1 Feist, NE NE SE sec. 29-18-11w. Siliceous lime 3,430-32½ ft.; T.D.; potential; pumped 346 bbls. oil in 18½ hrs.

Wakefield & Johnson No. 1 Bumm, SW SW NE sec. 22-19-12w. Rigging up.

Cowley County

Craft et al No. 1 Taylor, NE SE NW sec. 32-32-3. Rig.

Key to Abbreviations Used in Drilling Reports

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back (or plugged) back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdtr. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.S.C., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Craft et al No. 1 Whitson, NE NE NE sec. 20-33-4. Spudded and S.D.

Mead Bros. et al No. 1 Orr, SE SE SW sec. 23-31-4. Drlg. 1,435 ft.

D. D. Mickleson et al No. 1 Wallace, SW SE SE sec. 10-33-4. Building rig.

A. D. Morton et al No. 1 Roger, SE SE NE sec. 1-31-4. R.U.

Penwest Oil Co. No. 1 Clover, NE SE SE sec. 8-31-7. 19,000,000 ft. gas 1,430-60 ft.; Siliceous 3,177 ft.; T.D. 3,182 ft.; showing water; P.B. 2,260 ft.

Roth & Faurot No. 1 Guthrie, NW cor. Lot 14, sec. 30-33-8. Drlg. 2,655 ft.

A. M. Scroggin No. 1 Brady Est., NE NE SE sec. 30-31-3. Rig.

E. B. Shawver et al No. 1 Wilson, 8½ NE SE NE sec. 11-30-4. Drlg. 1,960 ft.

Shawver & Wilt No. 1 Baruth, SW NW NE sec. 8-34-3. Old well deepening from 1,893 ft.; sand 3,281 ft.; T.D. 3,303 ft.; est. 400 bbls. oil per day.

Earl Wakefield No. 1 Wilson, NW cor sec. 4-32-3. Drlg. 1,595 ft.

Ellis County

Blackwell O. & G. Co. No. 1 Solomon, SE SE SW sec. 28-11-19w. Drlg. 95 ft.

Bridgeport Machine Co. et al No. 1 Madden Est., NE NW NW sec. 26-15-18w. Building rig.

Brunson & Ewers-Simpson No. 1 Gross, NE NE SW sec. 29-14-17w. R.U.

Lario Oil & Gas et al No. 1 Walter, SE NE SW sec. 2-12-18w. Fshg. 1,030 ft.

Parrish & Denman No. 1 Walter, SE SW SE sec. 14-13-17w. M.I.M.

Twin Drlg. Co. No. 1 Reidel, SW SW NE sec. 27-13-16w. Drlg. 1,343 ft.

Ellsworth County

Empire O. & R. Co. et al No. 1 Kroesch, NW NW SE sec. 33-17-9w. R.U.

Skiles et al No. 1 Kafka, NE NE SW sec. 15-17-8w. Drlg. 1,730 ft.

Smith & Ash and Phillips Pet. Co No. 1 Splitter, SW cor. sec. 19-17-9w. T.D. 3,330 ft.; D.&A.

Greenwood County

Hale & Reese No. 1 Needles, NE SE NW sec. 12-25-10. Drlg. 285 ft.

Harper County

Marathon Oil Co. No. 1 Zellers, C SW NW sec. 17-35-8w. Wilcox sand 5,320 ft.; showing oil and gas, salty taste; coring.

Harvey County

Empire O. & R. Co. et al No. 1 Webster, SE SE SW sec. 8-24-2w. Drlg. 2,668 ft.

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. Drlg. 2,350 ft.

Western Kansas O. & R. Co. No. 1 Warkentin, C SW SW sec. 1-23-2w. Drlg. 2,490 ft.

Haskell County

Helmerich & Payne et al No. 1 Larson, C SE sec. 28-28-33w. Rig.

Kuhn Brothers et al No. 1 Nilson, SW SW SE sec. 21-28-32w. R.U.R.

Kearny County

L. F. Meyers et al No. 1 Beaty, C NW sec. 28-25-36w. Rotary rig.

Kingman County

D. R. Lauck et al No. 1 Skilling, C E½ E½ SW sec. 33-27-8w. O.W.D.D.; drlg. 4,583 ft.

Marion County

Milton et al No. 1 Young, NW NW SE sec. 17-21-3. Drlg. 2,685 ft.

McPherson County

Ok-Tex et al No. 1 Moehlinger, SE SW SW sec. 21-21-2w. Drlg. 2,794 ft.

Ness County

Continental Oil Co. No. 1 Holcomb, 1,320 ft. from N and 440 ft. from E lines of NW¼ sec. 26-11-23w. Drlg. 1,367 ft.

Continental Oil Co. No. 1 Thompson, C E½ E½ SW sec. 13-18-26w. Location.

Norton County

Lario O. & G. Co. and Elwell No. 1 Kennedy, SW SW NW sec. 22-3-23w. Fshg. 3,646 ft.

Reno County

Dickey Oil Co. No. 1-A Shepherd, NE NE NW sec. 22-26-9w. W.O.C., 249 ft.

Helmerich & Payne et al No. 1 Schwaiger, SW SE NE sec. 27-26-5w. Drlg. 3,150 ft.

McPherson Drlg. Co. et al No. 1 Miller, SE SE NE sec. 23-24-5w. Drlg. 3,140 ft.

Rice County

Joe Aylward et al No. 1 Oberle, SE SE SW sec. 19-18-10w. Drlg. 1,855 ft.

Continental Oil Co. and Empire Oil & Ref. Co. No. 1 Nickel, NE SW SW sec. 13-18-8w. Siliceous lime 3,210 ft.; T.D. 3,214 ft.; 2,500 ft. oil in hole; no test.

Day No. 1 Mason, NW NE NE sec. 28-21-7w. Chat 3,388-3,400 ft.; flowed 91 bbls. in 50 minutes; shut in 2 hrs., flowed 3 bbls. oil in 10 min.; running 6-in. lnr.

Dickey Oil Co. and Continental Oil Co. No. 1 Newkirk, NE NE SW sec. 11-18-7w. Cellar.

Duwe & Schneider No. 1 Wright, NE cor. sec. 36-21-7w. Drlg. 920 ft.

Glimac Oil Co. No. 1 Sargent, SE cor. sec. 31-18-6w. R.U.

Grattan et al No. 1 Williams, SW SW NW sec. 17-18-7w. H.F.W. 2,705-30 ft.; S.D. 2,745 ft.

Gulf Oil Corp. No. 1 Steckel, SW cor. sec. 30-19-10w.
Set 10-in. csg. 150 ft.

C. E. Skiles et al No. 1 Edwards, NW NW NE Sec. 3-18-8w.
Siliceous 3,278-81 ft.; T.D.; potential production 550 bbls. of oil in 24 hrs.; deepened to 3,282 ft.; potential 550 bbls.; comp.

Vernon Oil & Gas and Cusco Oil Co. No. 1 Boldt, NW SW NW sec. 10-19-10w. Drlg. 3,165 ft.

W. E. Witt No. 1 Hill, SE SE NW sec. 3-20-9w. Drlg. 1,075 ft.

Rooks County

Murfin et al No. 1 Wasthusin, NE NE SE sec. 19-9-16w. Drlg. 2,115 ft.

Pryor & Lockhart's No. 1 Bradley, SW SW NE sec. 31-10-16w. Oswald 3,166 ft.; drlg. 3,502 ft.

Skaer Oil Corp. et al No. 1 Dryden, NE cor. sec. 28-10-17w.
Moving in material.

Rush County

Boyle & Grossman No. 1 Wilson, NE cor. sec. 33-17-19w. Spudded.

Ira Keith et al No. 1 Dartmouth Savings Bank, SW SW NE sec. 3-17-18w. Fsg. 2,223 ft.

National Refining Co. No. 1 Werth, NW NE NE sec. 7-16-18w. Building rig.

Pryor & Lockhart et al No. 1 Stegman, SW NW NE sec. 11-16-17w. Cellar.

Rose Spring Drlg. Co. et al No. 1 Jacobs, SW SE NW sec. 8-16-17w. Spudded.

Russell County

R. G. Berry et al No. 1 Cook, NE NE SE sec. 19-11-13w. U.R. 905 ft.

Bridgeport Machine Co. et al No. 1 Wyckoff, SE NW NE sec. 27-11-13w. Fsg. 2,665 ft.

Coralena Oil Co. No. 1 Disken, SE cor. sec. 30-15-13w. Siliceous 3,252 ft.; 2,900 ft. O.I.H.; no test.

Darby Petroleum Corp. and Continental Oil Co. No. 1 Letsch, SE NE NW sec. 34-14-13w. R.U.

Eisenhour & Shaffer No. 1 Humes, SW SW SW sec. 6-14-12w. Drlg. 1,190 ft.

Empire O. & R. et al No. 1 Major, SE cor. sec. 11-14-12w. U.R. pipe 2,345 ft.

Hartman & Blair et al No. 1 Boxberger NW NW SW sec. 32-13-14w. Topeka lime 2,760 ft.; Oswald 3,039 ft.; T.D. 3,220 ft.; pumped 202 bbls. oil in first 24 hrs.

Sam Murphy et al's No. 1 Enschuts & Schaffer, SW cor. sec. 10-15-13w. Siliceous 3,311 ft.; T.D. 3,327 ft.; hole filled with oil in 12 hrs.; no test.

Charles Newbold No. 1 Krug, SE SW SE sec. 4-15-14w. Drlg. 2,815 ft.

R. C. Tarrant No. 1 Williamson, SE SE NW sec. 9-14-14w.
Tarkio lime 2,515 ft.; T.D. 2,550 ft.; swbd. 5 bbls. oil per hr., and showing of wtr.; acidized with 1,000 gals.; made potential of 243 bbls. of oil.

P. G. Reynolds No. 1 Fredrickson, SE SW SE sec. 6-13-12w. U.R. 2,350 ft.

Sedgwick County

Dickey Oil Co. No. 1 Ayers, SW SW NW sec. 12-27-2. R.U.

T. C. Johnson No. 1 Jansen, SW SW NW sec. 11-28-2. Drlg. 2,940 ft.

Stafford County

L. A. Farris et al No. 1 Snyder, SE SE NW sec. 3-21-11w. Gas est. 5,000,000 ft. and small spray of oil; T.D. 3,106 ft.

Kessler & Their No. 1 Evans, NE NE NE sec. 20-21-11w. Drlg. 1,625 ft.

Lario O. & G. Co. et al No. 1 Andress, C NW NE sec. 1-21-13w. R.U.R.

Sumner County

Craft & Wilson No. 1 Nevitt, NE NW NE sec. 36-32-2e. Fsg. 555 ft.

Helmerich & Payne et al No. 1 Elwell, NW NW NE sec. 18-34-1. Drlg. 2,325 ft.

Matthews & Derrington No. 1 Berry, NW NW SE sec. 14-35-1. Drlg. 132 ft.

Morgan et al No. 1 Veail, SE SW NE sec. 27-32-2. S.O. 3,359 ft.; C.O.

Wilcox O. & G. Co. et al No. 1 Hess, SE SE NW sec. 13-34-2w. Building rig.

D. J. Wilson et al's No. 1 Clark, 1,620 ft. from W and 25 ft. from S line of NW sec. 15-35-1w. Drlg. 3,400 ft.

Trego County

A. W. Ault et al No. 1 Loflin, NE NE SW sec. 22-13-21w. Cellar.

Central Oil Producers, Inc., No. 1 Wiley, NW SE sec. 17-13-21w. K.C. lime 3,548 ft.; bailed 30 bbls. oil per day; acidized; bailed 12 bbls. oil per day; C.O. 3,906 ft.

Continental Oil Co. No. 1 Holcomb, E½ E½ NW sec. 26-11-23w. Drlg. 3,125 ft.

R. B. McNeely et al No. 1 Lemke, NW NW SW sec. 7-11-22w. Rotary rig.

Worsley No. 1 Puritan, SW cor. sec. 32-13-25w. Cellar.

Woodson County

J. F. Mergen et al No. 1 Vermont Savings Bank, NE NW NE sec. 15-25-14. Fsg. 1,610 ft.

C. L. Sheedy No. 1 Baker, SE SE NW sec. 2-26-14. Drlg. 850 ft.

Max Reynolds No. 1 Guy, NE NE SE sec. 29-25-14. Drlg. 835 ft.

C. L. Sheedy et al No. 1 Grand Lodge, C E½ NW SW sec. 4-25-14. Drlg. 950 ft.

GULF COAST WILDCATS

Week Ending March 21

Raccoon Bend—Austin County

Humble O. & R. Co. No. 6-X Austin College, Wm. Harvey Sur. T.D. 3,305 ft.; perforated 3,288-3,303 ft.; I.P. 1,440,000 ft. of gas per day; ¼-in. choke.

Humble O. & R. Co. No. 17 Paine, Wm. C. White Sur. T.D. 4,095 ft.; 7-in. csg. at 3,896 ft.; W.O.C.

Humble O. & R. Co. No. 10-X Sherrod, Wm. C. White Sur. T.D. 1,156 ft.; 10¾-in. csg. at 1,148 ft.

Byron Mound—Brazoria County

Texas Co. No. 3 Freeport Sulphur Co., C. Areola Sur. Drlg. sh. 610 ft.

Hastings—Brazoria County

Humble O. & R. Co. No. 4 Cannon, H.T.& B. Sur. No. 36. Drlg. sh. at 4,955 ft.

Stanolind O. & G. Co. No. 1 C. D. Brown, H.T.&B. Sur. No. 29. Cg. in sd. 6,025 ft.

Stanolind O. & G. Co. No. 1 Droege Meyer, H.T.&B. Sur. No. 36. Drlg. lime and sh. 4,424 ft.

Stanolind O. & G. Co. No. 4 Grote, A C H.T.&B. Sur. No. 2. Drlg. sh. and shells 4,400 ft.

Stanolind O. & G. Co. No. 5 Shaw, H.T.& B. Sur. No. 36. Drlg. lime and sdy. sh. at 5,230 ft.

Manvel—Brazoria County

Bowles & Barsodi No. 5 Norvell, Lot 45, sec. 23, H.&T.C. Sur. Drlg. sh. 2,000 ft.

Texas Co. No. 5-B Belcher, H. N. Little Sur. Drlg. sh. and lime 4,822 ft.

Texas Co. No. 21 Houston Oil Field Assn., A.C.H.&B. Sur. No. 91. T.D. 1,151 ft.; 10-in. csg. at 1,132 ft.; W.O.C.

Texas Co. No. 2 Natali, H. N. Little Sur. Drlg lime at 5,014 ft.

Turman Oil Co. No. 3 F. Hart, H.T.&B. Sur. No. 24. Drlg. sh. at 1,200 ft.

Anahuac—Chambers County

Humble O. & R. Co. No. 10 Broussard, sec. 36, Abd. at 7,988 ft.

Humble O. & R. Co. No. 3 Engels, H.&T C. Sur. No. 50. T.D. 7,082 ft.; top sd. at 6,840 ft.; running csg.

Humble O. & R. Co. No. 1 C. A. Lord, H.&T.C. Sur. Derrick.

Humble O. & R. Co. No. 1 Johnson, H.& T.C. Sur. Drlg. sh. 6,680 ft.

Humble O. & R. Co. No. 15 Middleton, H.&T.C. Sur. Drlg. sh. 6,150 ft.

Humble O. & R. Co., No. 5 Tyrell, H.& T.C. Sur. Drlg. sh. 5,665 ft.

Humble O. & R. Co. No. 8 White, James McGahey Sur. 10¾-in. csg. at 1,522 ft.

Sun Oil Co. No. 9 White, J. McGahey Sur. T.D. 7,084 ft.; running csg.

Sun Oil Co. No. 10 White, J. McGahey Sur. Drlg. sh. and lime 5,427 ft.

Sun Oil Co. No. 11 White, J. McGahey Sur. Derrick.

Barbers Hill—Chambers County

Sinclair Prairie No. 19 Wilburn, Henry Griffith Sur. T.D. 5,275 ft.; hard sandy sh.; U.R. to 5,017 ft.

Stanolind Oil & Gas Co. No. 20 Wilburn Wm. Hodges Sur. T.D. 4,394 ft., flowing by heads, preparing to pump.

Stanolind O. & G. Co.'s No. 29 Chambers Wm. Bloodgood Sur. Derrick.

Superior Oil Co. No. 2-B Barber, T.D. 4,645 ft. in sh.; csg. parted at 3,200 ft.; milling.

Texas Gulf Prod. Co. No. 7 Wilburn, Wm. Hodges Sur. T.D. 5,350 ft.; set whipstock and sidetracked; now drlg. at 5,017 ft.

Turtle Bay—Chambers County

Stanolind O. & G. Co.-State No. 1 Turtle Bay. Cg. sdy sh. 7,039 ft.

Lost Lake—Chambers County

Pure Oil Co. No. 20 Mayes, E. H. R. Wallace Sur. T.D. 2,843 ft.; P.B. to 2,768 ft.; perforated from 2,320-25 ft. and 2,345-55 ft.; comp. for gas well; T.P. 185-300 lbs.; C.P. 250-400 lbs.

Blue Ridge—Fort Bend County

Ben Barnett No. 1 Blakely, E. Drew Sur. T.D. 1,995 ft.; swabbed dry, S.D.

Gulf Prod. Co. No. 19-B Bassett Blakely, E. Drew Sur. Comp.; no gauge.

S. S. Rainer No. 1 J. M. Davidson, S. Poitevent Sur. No. 3. T.D. 3,414 ft. 7-in. csg. at 3,380 ft.; flowing S.W.

D. M. Wallace and Woodley Pet. Co. No. 2 Blakely, E. Drew Sur. Drlg. sh. 3,530 ft.

Boling—Wharton County

Texas Co. No. 16-A Anne Taylor, S. F. Austin Sur. Drlg. sh. and lime 3,217 ft.

Orchard—Fort Bend County

Gulf Prod. Co. No. 44 Moore, Leo Burknapp Sur. Drlg. sh. 5,057 ft.

Gulf Ref. Co. No. 45 Moore, German Immigration Sur. No. 8. Sand 6,705 ft.

Gulf Prod. Co. No. 3-A Moore, Leo Burknapp Sur. Drlg. sdy. sh. 1,912 ft.

High Island—Galveston County

Stanolind O. & G. Co. No. 5 R.&N.O., Fitzsimmons Sur. Drlg. sh. 6,337 ft.

Stanolind O. & G. Co. No. 54 Cade, W. Fitzsimmons Sur. Drlg. lime 4,136 ft.

Stanolind O. & G. Co. No. 55 Cade, Wm. Hudson Sur. Drlg. sd. and lime 2,122 ft.

Stanolind Oil & Gas Co. No. 18-B Smith Royalty, M. Dunman Sur. Drlg. sh. 3,926 ft.

Dickinson—Galveston County

Coast Pet. Co. No. 3 Stewart, W. K. Wilson Sur. Drlg. sh. 7,820 ft.

Humble O. & R. Co. No. 2-B Bayou Dev. Co., J. Sellers Sur. T.D. 8,101 ft.; T.S. 8,090 ft.; mixing mud.

Humble O. & R. Co. No. 5-A Stewart, John Sellers Sur.
Rig.

Humble O. & R. Co. No. 5-B Stewart, J. Sellers Sur. Drlg. sh. 6,464 ft.

Humble O. & R. Co. No. 1 W. H. Wilson Blk. 103, San Leon Farm Subd., A. E. Edwards Sur. T.D. 8,042 ft.; 7-in. csg. at 8,031 ft.; W.O.C.

Pure Oil Co. No. 3 Shelar, B.B.B.&C. Sur. Cg. sh. 7,993 ft.

Stanolind O. & G. Co. No. 3 State, Tract 3. T.D 8,132 ft.; 7-in. csg. 8,030 ft.; P.B. to 8,025 ft.; perforated 7,997-8,024 ft.; failed to flow; I.P. 134 bbls. in 5½ hrs.; ¾-in. choke; flowed with gas.

Stanolind O. & G. Co. No. 4 State, Tract 3. Derrick.

Stanolind O. & G. Co. No. 5 State, Tract 3. S.D. 1,685 ft.

Batson—Hardin County

Deering et al No. 2 Jordan, W. Donoho Sur. Drlg. sh. at 4,922 ft.

Nimrod Prod. Co. No. 1 Butler, W. Donoho Sur. Rig.

Saratoga—Hardin County

John Deering No. 1 Teel, Thomas Gaines Sur. Bldg. drk.

Pierce Junction—Harris County

Harrison and Abercrombie No. 8 Ritter, J. Hamilton Sur. Drlg. sd. at 4,012 ft.

Rio Bravo Oil Co. No. 10 fee, B.B.B.&C. Sur. T.D. 4,358 ft.; swbd. S.W.

Rio Bravo Oil Co. No. 4 G.H.&S.A., G.H.& S.A. R.R. track. Drlg. sh. at 4,835 ft.

Humble—Harris County

Texas Co. No. 51 Stevenson, J. B. Stevenson Sur. Drlg. gbo. and lime 1,644 ft.

South Houston—Harris County

Smith & McDannald No. 1 S. S. Vallos, Mary Nichols Sur. Top oil sd. 3,907 ft.; cg. oil sd. 3,917 ft.

Stanolind O. & G. Co. No. 2 First National Bank, Callahan and Vince Sur. T.D. 4,811 ft.; D.S.T. from 4,710-4,811 ft.; showed 20 stands of oil in 17 min.; ¼-in. choke; 50 lbs. pressure.

Stanolind O. & G. Co. No. 1 Griffin, H. T.&B. Sur. No. 36. T.D. 4,875 ft.; 7⅝-in. csg. at 4,830 ft.; failed to flow; placed on pump; preparing to test.

Stanolind O. & G. Co. District No. 4, H. T.&B. Sur. Drlg. sh. and shells 2,817 ft.

Stanolind O. & G. Co. District No. 6, H. T.&B. Sur. T.D. 1,537 ft.; 10¾-in. csg. at 1,519 ft.

Stanolind O. & G. Co. District No. 7, H. T.&B. Sur. Drlg. sh. 3,035 ft.

Stanolind O. & G. Co. District No. 20, H. T.&B. Sur. T.D. 1,449 ft.; P.B. to 975 ft.; W.O.C.

Stanolind O. & G. Co. No. 1, District 46, center of Lot 8 Blk. 158, H.T.&B. Sur. No. 5. T.D. 5,166 ft.; preparing to make D.S.T.

Tomball—Harris County

Humble O. & R. Co. No. 4 Faris, W. Usner Sur. Drlg. sh. 5,535 ft.

Humble O. & R. Co. No. 2 Frederick, J. M. Hooper Sur. T.D. 5,574 ft.; I.P. 20 bbls. per hr.; ¼-in. choke.

Humble O. & R. Co. No. 3 Hoffman, J. House Sur. T.D. 5,580 ft.; 7-in. csg. at 5,573 ft.; I.P. 20 B.P.H.; ¼-in. choke; T.P. 850 lbs.; C.P. 850 lbs.

Humble O. & R. Co. No. 3 Scherer, T.D. 930 ft.; 10¾-in. csg. at 912 ft.

Humble O. & R. Co. No. 1 West, Elizabeth Smith Sur. Drlg. sh. 5,578 ft.

Shell Pet. Corp. No. 1 Robertson, T.D. 5,562 ft.; rocking with gas.

Sun Oil Co. No. 8 Metzler, C. N. Pillot Sur. T.D. 5,562 ft.; 7-in. csg. at 5,550 ft.; W.O.C.

Amelia—Jefferson County

Humble O. & R. Co. No. 1 Broussard C. Williams Sur. Drlg. sdy. sh. 7,360 ft.

Humble O. & R. Co. No. 2 R. C. Miller, A. Savery Sur. Drlg. sd. at 6,840 ft.

Glenn McCarthy No. 2 Bessie Longe, H. Williams Sur. Rig.

Fannett—Jefferson County

Blue Eagle Oil Co. No. 2 Junker, W. H. Smith Sur. Drlg. sh. 5,810 ft.

Gulf Oil Corp. No. 18 Thomas, W. H. Smith Sur. Drlg. sd. 4,369 ft.

Cleveland—Liberty County

Gulf Oil Corp. No. 14-C Kirby, C. J. Pleasant Sur. R.U.

Esperson—Liberty County

Crown Pet. Co. No. 1 Davis, D. Kokernot Sur. Bldg. drk.

General Crude Oil Co. No. 11 T. E. Davis, D. Kokernot Sur. D.&A. at 5,896 ft.

General Crude Oil Co. No. 14 Davis, D. Kokernut Sur. Derrick.

General Crude Oil Co. No. 23 Esperson, Fisher Sur. T.D. 2,812 ft.; I.P. 7 B.P.H. on pump.

Hankamer—Liberty County

Gulf Oil Corp. No. 6 Crow and Jacobs, H.&T.C. Sur. No. 21. Drlg. sd. and bldrs. 1,313 ft.

Hardin—Liberty County

Atlantic Oil & Prod. Co. et al No. 1 Hardy, James Robinson Sur. Derrick.

Hull—Liberty County

Humble O. & R. Co. No. 39 Guedry, J. Devore Sur. Drlg. sdy sh. 3,300 ft.

Bay City—Matagorda County

Skelly Oil Co. No. 1 Langham, M. Cummings Sur. Bldg. drk.

Skelly Oil Co. No. 1 E. C. Metzger, M. Cummings Sur. T.D. 7,504 ft.; 7⅝-in. csg. at 7,504 ft.; I.P. 714 B.P.D.; ¼-in. choke; T.P. 1,075 lbs.; C.P. 1,225 lbs.

Skelly Oil Co. No. 4-B Cobb, M. Cummings Sur. Cg. sd. and sh. 7,337 ft.

Skelly Oil Co. No. 5-B Cobb, M. Cummings Sur. T.D. 7,503 ft.; 7⅝-in. csg. at 7,503 ft.; I.P. 826 B.P.D.; ¼-in. choke; T.P. 1,375 lbs.; C.P. 1,175 lbs.

Conroe—Montgomery County

Sun Oil Co. No. 18 Foster, C. B. Stewart Sur. Rig.

Sun Oil Co. No. 27 Foster. T.D. 5,130 ft.; I.P. 197 B.P.D.; ¼-in. choke; C.P. 800 lbs.; T.P. 400 lbs.

Orange—Orange County

T. J. Ward et al No. 1 R. W. Brown, S. M. Luce Sur. Drig. sh. 5,022 ft.

Port Neches—Orange County

Texas Co. No. 4-B Polk, J. Beaumont Sur. T.D. 6,953 ft.; 7-in. csg. at 5,856 ft.; drilled plug; circulating and conditioning mud; P.B. to 5,721 ft.

Livingston—Polk County

Humble O. & R. Co. No. 27 Granbury, A. Viesca Sur. Set 10¾-in. csg. at 573 ft.; S.D.

Gunby-Shell No. 2 Munson, A. Viesca Sur. T.D. 4,300 ft.; 5½-in. csg. at 4,278 ft.

Greta—Refugio County

United Gas Co. No. 22 Lambert, Hardwick Sur. Drig. sh. 1,735 ft.

Hewitt and Daugherty No. 22 Lambert, Hardwick Sur. Drig. sh. 3,736 ft.

Refugio—Refugio County

Local Oil Co. No. 1 W. L. Rea, Refugio Townsite. Drig. sh. 4,230 ft.

United Gas Co. No. 17 Fox Hews Survey. Drig. sh. 4,729 ft.

Tomeconmor—Refugio County

Quintana Oil Co. No. 32-A O'Conner, Swisher Sur. T.D. 5,960 ft.; 7-in. csg. set 5,953 ft.; perf. csg.; I.P. 1,550 B.P.D. through ¾-in. choke.

Quintana Oil Co. No. 33-A O'Connor, Swisher Sur. Rig.

Colette Creek—Victoria County

American Liberty Oil Co. No. 3 Machalle, R. Manchola Sur. T.D. 2,871 ft.; 7-in. csg. at 2,854 ft.

National Pet. Corp. No. 1 J. Stehle, Piedras Geilarde Sur. S.D. 5,393 ft.

Placedo—Victoria County

American Liberty Oil Co. No. 4 Gray, S.A.&M.G. Sur. Drig. sh. 825 ft.

Barnsdall Oil Co. No. 2 W. R. Smith, Lot 7. T.D. 6,035 ft.; 5.3-in. lnr. at 6,-025 ft.

Barnsdall Oil Co. No. 2 Pickering-Ross, S.A.&M.G. Drig. sh. 2,100 ft.

Barnsdall Oil Co. No. 3 J. M. Pickering S.A.&M.G. Sur. No. 5. R.U.

Barnsdall Oil Co. et al No. 2 Wheless, J. M. Bronson Sur. R.U.

Crown Central Pet. Co. No. 1 F. Gebrover, S.A.&M.G. Sur. No. 8. Rig.

Eastern Texas Prod. Co. No. 1 Krappa, Lot 12, Wm. Rupley Sur. T.D. 6,480 ft.; 5 3/16-in. csg. at 5,370 ft.; perforated; 5,340-45 ft.; running tbg.

Harrison & Abercrombie No. 1 C. O. Vess, J. M. Bronson Sur. Drig. sh. 3,160 ft.

Superior O. & G. Co. et al No. 2 Janis, Wm. Rupley Sur., A-290. T.D. 4,743 ft.; 5 3/16-in. csg. set on bottom; perforated; tested gas, shut in.

Sun Oil Co. No. 3 J. J. Marek, J. M. Brownson Sur. T.D. 4,778 ft., 7-in. csg. at 4,755 ft.; I.P. 81 bbls. in 24 hrs.; ½-in. choke; T.P. 200 lbs.; C.P. 400 lbs.

Sun Oil Co. No. 4 Marek, J. M. Bronson Sur. M.I.

Clay Creek—Washington County

Sun Oil Co. No. 3 A. Draper, J. F. Perry Sur. Abd. 2,544 ft.

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur. Bldg. drk.

Louise—Wharton County

Pure Oil Co. No. 3 Lancaster, M.&C. Sur., sec. 23. M.I.

Pure Oil Co. No. 1 Rivera, sec. 19. Drig. sdy. sh. 2,870 ft.

Pickett Ridge—Wharton County

Texas Co. No. 12-A Pierce, I.&G.N. Sur. No. 38. T.D. 4,706 ft.; 7-in. csg. at 4,700 ft.; I.P. 23 B.P.H.; ¼-in. choke.

Texas Co. No. 13-A Pierce, I.&G.N. Sur. Drig. gbo. and lime 3,326 ft.

Texas Co. No. 15-A Pierce, G.H.&S.A. R.R. right of way. Drig. sh. and lime 2,-966 ft.

Texas Co. No. 16-A Pierce, I.&G.N. Sur. Rig.

Withers—Wharton County

Texas Co. No. 1-B Pierce, E.T. R.R. Sur., Abst. No. 108. R.U.

Texas Co. No. 3-C Pierce, J. Caldwell Sur. Drig. sh. and lime 5,093 ft.

Texas Co. No. 4-C Pierce, J. Caldwell Sur. Building road.

SOUTH LOUISIANA FIELDS

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 11 Bay St. Elaine, sec. 17-22s-18e. Abd. 6,731 ft.

Bayou Mallet—Acadia Parish

Superior Oil & Prod. Co. No. 1 Bradley, sec. 47-7s-1e. Drig. sdy. sh. 7,896 ft.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 26 Watkins, sec. 18-12s-12w. Drig. sh. 3,562 ft.

Shell Pet. Corp. No. 28 Watkins. P.B. to 4,396 ft.; swbng.

Shell Pet. Corp. No. 31 Watkins, sec. 8-12s-12w. Cg. sandstone 5,342 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 22 Caillou Island, sec. 20-23s-20e. Cg. sd. S.O. 4,176 ft.

Texas Co. No. 2 Terrebonne Bay, sec. 19-23s-20e. Drig. hd. sh. 6,418 ft.

Texas Co. No. 33 State, Cg. sd. 4,115 ft.

Texas Co. No. 35 State, sec. 17-23s-20e. Drig. sd. 4,939 ft.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 12 School Land, sec. 16-14s-12w. Recovered 2,700 ft. of oil on drill stem from 3,780-3,800 ft.; set csg. and swabbed dry.

Burton Sutton Oil Co. No. 13 School Land, sec. 16-14s-12w. Derrick.

Texas Co. No. 2 Miami Corp., sec. 15-14s-13w. Drig. hr. lime 2,639 ft.

Chenevyville—Rapides Parish

Amerada Pet. Corp. No. 1 Beasley, sec. 53-1s-2e. T.D. 5,719 ft.; 7-in. csg. at 5,714 ft.; W.O.C.

Texas Co. No. 1 Weil, sec. 53-1s-2e. R.U.

Texas Co. No. 2 Weil, sec. 53-1s-2e. Drig. sd. and gravel 1,710 ft.

Texas Co. No. 1 State (Andrade), sec. 5-1s-2e. Spudded 86 ft.; S.D.

Choctaw Dome—Iberville Parish

Standard Oil Co. No. 8 Myrtle Grove Wilburt, sec. 52-9s-11e. T.D. 5,828 ft.; P.B. to 3,000 ft.; sidetracked; drig. sh. 3,527 ft. in new hole.

Darrow—Ascension Parish

Humble O. & R. Co. No. 10 Community sec. 32-10s-2e. T.D. 5,597 ft.; D.S.T. from 5,574-97 ft.; recovered 1,170 ft. of oil.

Humble O. & R. Co. No. 6 Gumbie, sec. 33-10s-2e. Cg. in sd. 6,137 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 3 State, sec. 5-22s-16e. Drig. sdy sh. 4,329 ft.

Edgerly—Calcasieu Parish

J. G. Sutton No. 17 Lillard, sec. 28-9s-11w. S.D. 1,552 ft.

Thompson & Mossart No. 1 Fairchild. Drk.

Garden Island Bay—Plaquemines Parish

Texas Co. No. 18 State, sec. 37-22s-32e. Drig. sh. 3,479 ft.

Gillis—Calcasieu Parish

Foha Oil Co. No. 1 Frost, sec. 11-9s-8w. Drig. at 5,302 ft.

Foha Oil Co. No. 1 Mary McIver, sec. 14-9s-8w. Derrick.

Texas Co. No. 8 Nickerson, sec. 12-9s-8w. T.D. 6,717 ft.; 6⅝-in. csg. at 6,708 ft.; I.P. 541 B.P.D.; 16/64-in. choke; T.P. 910 lbs.

Union Sulphur Co. No. 1 J. A. Bel estate. Drig. sh. 4,981 ft.

Union Sulphur Co. No. 1 G. S. Cole, sec. 12-9s-8w. Spudded.

Union Sulphur Co. No. 6 Castle, sec. 13-9s-8w. Drig. sh. 7,602 ft.

Union Sulphur Co. No. 13 State, sec. 13-9s-8w. T.D. 6,741 ft.; 5-in. csg. at 6,725 ft.; preparing to comp.

Hackberry—Cameron Parish

Gulf Ref. Co. No. 20 Irwin, sec. 13-12s-10w. T.D. 7,684 ft.; reaming at 7,585 ft.

Stanolind O. & G. Co. No. 16-A School Land, sec. 16-12s-12w. R.U.

Stanolind O. & G. Co. No. 21-B Gulf Land, sec. 14-12s-10w. Drig. hd. sd. 6,698 ft.

Stanolind O. & G. Co. No. 22-B Gulf Land, sec. 14-12s-10w. Drk.

Texas Co. No. 19-B State, sec. 13-12s-9w. Drig. shale and lime 5,776 ft.

Iowa—Jefferson Davis Parish

Shell Pet. Corp. No. 19 Heyd, sec. 13-9s-7w. T.D. 9,161 ft.; P.B. to 5,200 ft.; set screen and preparing to test.

Shell Pet. Corp. No. 20 Heyd, sec. 13-9s-7w. T.D. 5,275 ft.; P.B. 5,246 ft.; W.O.C.

Shell Pet. Corp. No. 5 Tuten, sec. 13-9s-7w. T.D. 6,743 ft.; P.B. to 6,718 ft.; I.P. 439 bbls. oil, 10 bbls. S.W. per day; T.P. 555 lbs.; C.P. 750 lbs.

Shell Pet. Corp. No. 7 Stafford, sec. 18-9s-7w. R.U. (corrected).

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Banta, sec. 49-13s-9e. Drig. sh. 1,466 ft.

Herton Oil Co. No. 1 Carter, sec. 38-13s-9e. Drig. gravel 1,105 ft.

Herton Oil Co. No. 3 Roane, sec. 40-13s-9e. R.U.

Jennings—Acadia Parish

Lee Guthrie No. 2 Houssiere-Latrielle. T.D. 1,630 ft.; I.P. 110 B.P.D. on pump. Shell Pet. Corp. No. 1 Conover, sec. 40-9s-2w. Drig. sdy. lime 4,673 ft.

Stanolind O. & G. Co. No. 16 Houssiere-Latrielle, sec. 47-9s-2w. Bldg. drk.

Lafitte—Jefferson Parish

Texas Co. No. 2 Rigolettes, sec. 30-17s-24e. Cg. oil sd. 8,116 ft.

Texas Co. No. 3 Lafitte, sec. 19-17s-24e. Drig. oil sd. at 9,417 ft.

Lake Hermitage—Plaquemines Parish

Gulf Ref. Co. No. 4 LaFourche Basin Levee sec. 15-18s-25e. Drig. rock 3,575 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre State. R.U.

Texas Co. No. 39 State, sec. 20-12s-20e. Drig. sh. 2,640 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 14 State, sec. 8-23s-18e. T.D. 7,246 ft.; P.B. and sidetracked; 6,686 ft.; I.P. 960 B.P.D.; ⅝-in. choke; T.P. 640 lbs.

Leesville—LaFourche Parish

Gulf Prod. Co. No. 8 Allen Land Co., sec. 21-21s-22e. Drig. sd. 3,512 ft.

Lincoln Oil Co. No. 1 Constentine, sec. 27-21s-22e. Rig up.

Texas Co. No. 43 Leesville (L.L.&E.), sec. 26-21s-22e. T.D. 4,276 ft.; I.P. 1,954 B.P.D.; ½-in. choke; T.P. 640 lbs.

Texas Co. No. 44 Leesville, sec. 27-21s-22e. Cg. oil sd. 4,095 ft.

Roanoke—Jefferson Davis Parish

Glassell and Gulf Prod. Co. No. 1 T. A. Anding, sec. 2-9s-4w. Drig. sd. 8,650 ft.

Humble O. & R. Co. No. 3 Nelson H. Thomas, sec. 11-9s-4w. T.D. 8,694 ft.; 7-in. csg. at 8,667 ft.; W.O.C.

Humble O. & R. Co. No. 3-B De Vilbiss, sec. 11-9s-4e. T.D. 8,850 ft.; 7-in. csg. at 8,837 ft.; I.P. 747 B.P.D.; ¼-in. choke; T.P. 1,300 lbs.

Shell Pet. Corp. No. 5 Kratzer, sec. 12-9s-4w. R.U.

Port Barre—St. Landry Parish

Gulf Ref. Co. No. 1 Sibille, sec. 7-4s-7e. Abd. 6,360 ft.

Pacheon Oil Co. No. 1 Gauden, Sec. 4-4s-4e. Cg. sd. S.O. 3,637 ft.

Pan American Prod. Co. No. 1 Watkins. T.D. 5,026 ft.; P.B. to 2,850 ft.; drig. sh. 4,176 ft.

St. Martinville—St. Martin Parish

Continental Oil Co. No. 1 fee, sec. 13-11s-6e. Set sur. csg. at 180 ft.; W.O.C.

Tide Water Oil Co. No. 2 Smedes, sec. 57-11s-6e. T.D. 8,714 ft.; 9⅝-in. csg. at 7,412 ft.; sidetracked and drig. sh. at 8,522 ft.

Sorrento—Ascension Parish

Athens Oil Co. No. 4 United land, sec. 15-10s-4e. Drig. sh. 1,533 ft.

Sorrento Oil Co. No. 1 Bernard, sec. 9-10s-4e. Derrick.

Starks—Calcasieu Parish

L. R. Welhite No. 1 Industrial Lbr. Co., sec. 19-9s-12w. T.D. 4,263 ft.; P.B. to 3,600 ft.; P.B. again to 2,593 ft.; set whipstock; drig. through plug.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 821 fee, sec. 29-9s-10w. Drig. sh. 2,942 ft.

Union Sulphur Co. No. 822 fee, sec. 29-9s-10w. Spudded.

Tepetate—Acadia Parish

Continental Oil Co. No. 1 C. O. Ardoin, sec. 28-7s-2w. T.D. 8,319 ft.; set 5⅝-in. csg.; I.P. 338 bbls. in 12 hrs.; ¼-in. choke; T.P. 2,600 lbs.; C.P. 2,850 lbs.

Continental Oil Co. No. 2 Homeseekers, sec. 29-7s-2w. Drig. sh. 1,373 ft.

Continental Oil Co. No. 3 C. Miller, sec. 29-7s-2w. Cd. gas sd. 8,290-8,304 ft.; cg. ahead for oil sd.

Continental Oil Co. No. 1 P. W. Miller, sec. 28-7s-2w. Drig. hd. lime 7,527 ft.

Loffland Bros. No. 1-A L. C. Bowles, sec. 28-7s-2w. Drig. sdy. sh. 6,958 ft.

Loffland Bros. No. 1-B L. C. Bowles, sec. 28-7s-2w. T.D. 7,419 ft.; P.B. to 6,460 ft.; W.O.C.

White Castle—Iberville Parish

Shell Pet. Corp. No. 10 Wilbert, sec. 1-11s-12e. T.D. 6,466 ft.; 9⅝-in. csg. 6,450 ft.; W.O.C.

Miscellaneous Wildcats

TEXAS

Brazoria County

Gulf Prod. Co. No. 1 J. E. Fairfield, A. Robinson Sur. T.D. 6,277 ft.; est. 175 B.P.D.; gas pressure 1,800 lbs.

Strake Oil Corp. et al No. 1 D. K. Poole, J. W. Harding Sur. Drig. sh. 4,900 ft.

Texas Gulf Prod. Co. No. 1 Sparks. Drk.

Chambers County

Black Gold Oil Co. No. 1 Borrow, Ruben Borrow Sur. Abd. 8,663 ft.

Salt Dome Oil Co. No. 2 Lawrence, Solomon Borrow Sur. R.U.

Calhoun County

Continental Oil Co. No. 2-A American Realty Co., Pedro Garcia Sur., Lot 1, Blk "C." T.D. 9,082 ft.; set 5⅝-in. csg. on bottom; csg. collapsed; plugged off the bottom of csg. at 8,010 ft.; perforated csg. 7,730-75 ft.; prepare to test.

Crown Central Pet. Co. No. 1 M. C. Driscoll, Benito Morales Sur. T.D. 1,275 ft.; 10¾-in. csg. at 1,250 ft.

Humble O. & R. Co. No. 1 Patrick H. Welder, Jose Maria Rios Sur. Top sd. S.O. 5,815 ft.; T.D. 5,820 ft.; preparing to make D.S.T.

Colorado County

G. W. Johnson No. 1 Drymalle, T. Coleman Sur. R.U.

Galveston County

Sun Oil Co. No. J. D. Hughes, W. M. C. Baker Sur. T.D. 8,613 ft.; milling at 8,-504 ft.

Grimes County

Crook Bros. No. 1 W. W. and J. C. Greir. Derrick.

Hardin County

Republic Prod.-Houston Oil Co. No. 1 A. A. Burrell, A. A. Burrell Sur. No. 5-A. T.D. 7,778 ft.; P.B.; set whipstock at 3,588 ft.; drig. sh. 5,784 ft.

Harris County

Amerada Pet. Corp. No. 1 Nellie Esperson, George Patrick Sur. Drk

Jefferson County

Sun Oil Co. No. 1 Herbert & Broussard, B. Blackman Sur., Abst. No. 2, T.D. 8,-524 ft.; P.B. and sidetracked at 8,252 ft.; set whipstock at 7,403 ft.; P.B. to 7,245 ft.; trying to whipstock out.

Smith and McDannald No. 1 Grennell, Blk. 8, H.&T.C. Sur. Drig. sh. 6,793 ft.

Matagorda County

Continental Oil Co. No. 1 Feife, J. S. Criswell Sur. T.D. 7,629 ft.; P.B. to 6,024 ft.; cutting and pulling 8⅝-in. csg.

Heimerich & Payne, No. 1 Hawkins, D. McCarthy Sur. T.D. 7,831 ft.; P.B. to 7,316 ft.; perforated from 7,290-7,310 ft.; ran tbg. and swbd. 6,000 ft.; S.D.

H. M. Smith et al No. 2 Wadsworth, Lot 33, Blk. 4, S. R. Fisher Sur. T.D. 1,300 ft.; 13⅜-in. csg. set 1,290 ft.; no report.

Sun Oil Co. No. 1 Craig, Thomas Williams Sur. Drig. sh. and lime 5,912 ft.

Montgomery County

Chapman and Smith No. 1 Delta Land & Timber Co., T. Shepperd Sur. No. A-488. S.D. 2,589 ft.

Chapman & Smith No. 2 Delta Land & Timber Co., T. Shepherd Sur. S.D. 2,-668 ft.

Jack Frazier No. 1 Maxey, James Brown Sur. S.D. at 5,045 ft.

Polk County

O. C. Davis No. 1 Knox, F. Chairs Sur. Drig. sh. 3,376 ft.

J. P. Lightfoot et al No. 1 Lynch Davidson, Houston County School Land Sur., Abst. No. 270. Drig. sh. 2,907 ft.; no report.

Washington County

W. D. Twichell et al No. 1 W. H. Hoxie, S. Ciampit Sur. Drig. sh. 1,630 ft.

Wharton County

Cockburn Oil Corp. No. 1 Conner, sec. 78, E.T.R.R. Sur. Abd. 6,024 ft.

Pure Oil Co. No. 1 Paige, James Pirie Sur. T.D. 7,756 ft.; circulating.

Sterling O. & R. Co. No. 1 Agnes Genger, J. Scott Sur. Cmtd. sur. csg. 720 ft.

Texas Co. No. 1 Joseph Marek, I.&G.N. Sur. No. 76. T.D. 5,010 ft.; P.B. to 4,-622 ft.; perforated csg. 4,600-12 ft.; running screen.

SOUTH LOUISIANA

Avoyelles Parish

Frost Oil Co. No. 1 Hinds Lbr. Co., sec. 3-3n-4e. R.U.

Calcasieu Parish

A. G. Oliphant No. 1 Calcasieu National Bank, sec. 23-10s-12w. T.D. 6,943 ft.; sh.

Wheeler Oil Co. No. 1 School, sec. 16-9s-7w. Drig. sh. 7,136 ft.

West Feliciana Parish

Southern Minerals Corp. No. 1 Mary B. Wood, sec. 54-1s-4w. Abd. 1,138 ft.

R. L. Morris (C. L. Thompson) No. 1 Percy, sec. 89-1s-4w. Drig. sandy shale 3,953 ft.

Iberia Parish

Canal Oil Co. No. 1 Bolivar, sec. 2, in sec. 56-12s-7e. Topped salt 4,231 ft.; P.B. and sidetracked; S.D. 3,118 ft. in new hole.

Canal Oil Co. No. 3 Sabatier, sec. 54-12s-7e. Drk.

Jefferson Lake Oil Co. No. 1 State, Twp. 12s-5e. T.D. 8,610 ft.; tested S.W.; perforated from 8,446-68 ft. with 50 holes; D.S.T.'s showed nothing; W.O.

Jefferson Lake Oil Co. No. 322 State Lake Pleigneur. Drig. sh. 3,559 ft.

Kitos Oil Co. No. 2-A Sealey, sec. 56-12s-7e. R.U.

Texas Co. No. 1 State Fausse Point. P.B. to 6,400 ft.; cmtd. whipstock and sidetracked at 5,781 ft.; T.D. 6,405 ft. in new hole; stuck D.S.

Jefferson Davis Parish

J. K. Lewis No. 1 Lockmore, sec. 32-7-4. T.D. 5,710 ft.; T.D. of sidetracked hole 5,510 ft.; hole cleaned of junk; preparing to drill plug.

Shell Pet. Corp. No. 1 Lacassan, sec. 20-11s-5w. T.D. 9,802 ft.; fshg. at 6,034 ft.

St. James Parish

Shell Pet. Corp. No. 1 Colonial Sugar, sec. 5-12s-5e. Cg. sd. 5,789 ft.

St. Martin Parish

Southern Oil (S. C. Yingling et al) No. 1 State, sec. 13-9s-8w. T.D. 3,130 ft.; 7-in. csg. at 3,120 ft.; running screen and lnr. to test.

Texas Co. No. 8 St. Martins Land, sec. 17-8s-7e. Drig. sdy. sh. 7,097 ft.

Plaquemines Parish

Southern Sulphur Co. No. 1 Manhattan Fruit Co., sec. 26-21s-30e. S.D. 3,512 ft.; shale.

Rapides Parish

Foster Oil Co. No. 1 J. F. Hogan, sec. 2-1s-2e. Drig. sh. 3,006 ft.

Vernon Parish

Llano Cooperative Oil Co. No. 3 Llano Del Rio, sec. 7-1n-9w. S.D. 2,951 ft.

LA.-ARK. WILDCATS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

Bienville Parish

DeSoto O. & G. Co. No. 1 C. R. Mower, 270 ft. S. 400 ft. W. NE cor. NW SW sec. 9-16-10. Drig. 2,985 ft.

Lide & Greer No. 1 Davis Bros. Lbr. Co., 660 ft. S and W. NE cor. SE sec. 12-16-5w. Drig. 6,019 ft.

Bossier Parish

Geo. H. Bringhurst et al No. 1 Buckley, NE SW sec. 36-21-13. S.D.; rig repair 2,250 ft.

United Gas Pub Ser. Co. No. 1-A A. J. Murff, NW cor. sec. 17-17-11. Drlg. 3,390 ft.

Caddo Parish

Falcon Oil Co. No. 15 Deckson, NW SE sec. 27-20-15. Drlg. 2,150 ft.

Hillman et al No. 2 Muslow, NW SE sec. 32-21-15. Set 10-in. 80 ft.; set 7-in. 2,120 ft.; testing 2,140 ft.

Juan et al No. 1 Hobbs, NE NE sec. 28-21-15. Set 10-in. 90 ft.; set 7-in. 1,348 ft.; (cor.).

Pyramid O. & G. Co. No. 1-A S. R. Wheeler, 1,320 ft. S, 1,500 ft. W, NE cor. sec. 16-18-16. Drlg. 3,665 ft.

Sport Oil Corp. No. 1-D Muslow, SE cor. sec. 5-20-15. Cg. 2,140 ft.

Caldwell Parish

Critchett & Woods No. 1 Kyles NE cor. SW NE sec. 18-11-3e. S.D. 1,740 ft.

Claiborne Parish

W. C. Glothlin et al No. 1 Brinker, SW cor. SE sec. 10-23-4w. Drlg. 3,807 ft.

E. T. Oakes No. 1 H. W. Patton Est., 660 ft. S and W, NE cor. sec. 1-20-4w. Fishing for D.S., 4,242 ft.

Triangle Drlg. Co. No. 1 Kilpatrick, 660 ft. N and E cen. sec. 7-19-5. O.W.D.D. 4,458 ft.

United Gas Public Service Co. No. 2 Durfett, 660 ft. N and 1,980 ft. E, SW cor. sec. 31-20-5. Set 7-in. 5,665 ft.

Concordia Parish

Zeni Oil Co. No. 1 Young, 1,200 ft. W, 100 ft. N, SE cor. sec. 28-6n-8e. S.D. 1,120 ft.

De Soto Parish

S. S. Alexander No. 1 G. R. Stell, 330 ft S and W, NE cor. sec. 5-12-16. S.D. 5,595 ft.

A. G. Halbach et al No. 1 Staton, 150 ft. N and E, SW cor. SE sec. 29-13-14. S.D. 3,204 ft.

S. C. Jensen No. 1 Bailey, 660 ft. N and W of C sec. 12-11-6e. R.U.

R. C. Payne No. 1 Harris, NE cor. SW SE sec. 11-13-14. Set 10-in. 27 ft.; S.D. 300 ft.

Union Pet. Co. No. 1 Hill, sec. 3-10-13. S.D. 1,400 ft.

J. K. Wodley et al No. 2 Logan Oil Co., NW sec. 16-10-12. Set 7-in. 3,065 ft.; will deepen from 3,184 ft.

Grant Parish

Alexander et al No. 1 Maxwell, sec. 9-9-1e. W.O.S.R. 1,538 ft.

Law Oil Co. No. 1 Long, SE cor. SW sec. 9-9-1e. Set 10-in. 60 ft.; drlg. 300 ft.

Taw Oil Co. No. 1 Bradford, NE cor. NW sec. 16-9-1e. Set 10-in. 60 ft.

Jackson Parish

Geo. W. Zeigan No. 4 La. Cent. Lbr. Co., NW SE sec. 25-14-2w. Set 12½-in. csg. 63 ft.; S.D. 1,781 ft.

Geo. W. Zeigan No. 5 La. Cent. Lbr. Co., SW NE sec. 13-14-2w; set 12½-in. csg. 63 ft.; S.D. 1,770 ft.

La Salle Parish

Montague Oil Co. No. 7-A Zenonia Lbr. Co., NE cor. sec. 10-9-1e. Set 10-in. 40 ft.; S.D. 1,520 ft.

Lincoln Parish

Ark.-La. Gas Co. No. 1 C. E. Causey, NW cor. NE NW sec. 32-19-2w. Drlg. 2,331 ft.

Caldwell Land & Timber Co. No. 1 J. A. Hammons, 330 ft. S and E, NW cor. SE SW sec. 30-18-1w. S.D. for fuel 403 ft.

Herman L. Brown et al No. 1 S. Gardner, 330 ft. N, 380 ft. E, SW cor. NW NE sec. 10-17-4w. S.D. 4,587 ft.

Morehouse Parish

J. B. Collins et al No. 1 E. M. Clarke, SE NE sec. 10-20-7e. Rigging up.

Grecian Bend Oil Co. No. 1 Sandidge, NE cor. sec. 2-20-4e. Comp.; 2,000,000 ft. gas 2,197 ft.

United Gas Pub. Ser. Co. No. 32 Crossett, NE SE sec. 27-21-4e. Set 7-in. 2,111 ft.

United Gas Pub. Ser. Co. No. 34 Crossett, NE cor. sec. 27-21-4e. Set 13-in. 141 ft.

Ouachita Parish

United Gas Pub. Ser. Co. No. 36 fee, SE cor. SE sec. 31-19-4e. Comp.; 2,000,000 ft. gas 2,187 ft.

Richland Parish

J. S. Morrisey No. 1 Jones, 1,293 ft. N 636 ft. E, SW cor. sec. 15-18-7e. S.D. 1,322 ft.

Arthur Wray No. 1 Slocum, 2,436 ft. S 560 ft. W, NE cor. sec. 10-17-6e. S.D. 1,260 ft.

Sabine Parish

J. E. Doughtie No. 2 Edwards, NW cor NW sec. 29-9-13. Comp.; 255 bbls. daily 1,626 ft.

M. C. Forsman No. 1 Patrick, NE SW sec. 21-9-13. Set 8-in. 75 ft.

Monroe Prod. Co. No. 1 Boyd, NE cor. SE sec. 25-9-14. Set 10-in. 72 ft.; set 6-in. 1,575 ft.

J. E. Nicholson No. 1 Cassell, 330 ft. S and W, NE cor. NW SW sec. 25-9-14. W.O.S.R. 2,110 ft.

Posey Sisters Oil Co. No. 2 A. J. Burkett, C NE NE sec. 10-9-13. Set 7-in. 1,440 ft.; testing 1,973 ft.

Claude H. Smith No. 1 Whitney Corp., 330 ft. S, 990 ft. W, NE cor. sec. 19-10-13. S.D. for fuel 1,615 ft.

A. H. Tarver No. 2 Baker, NW cor. NE sec. 36-8-13. Drlg. 4,500 ft.

Lee Whitehurst No. 1 Cassell, 440 ft. S and W, NE cor. NW sec. 30-9-13. Comp.; 120 bbls., 2,100 ft.

Whitehurst & Myers No. 1 Paul, SE cor. SW sec. 24-9-14. Set 10-in. csg. 42 ft.

Union Parish

Boucher & Pace No. 1 Frost-Johnson, NE NE sec. 27-21-1e. Set 10-in. 890 ft.

Interstate Nat. Gas Co. No. 44 fee, NW SW sec. 7-20-4e. Set 6-in. 2,086 ft.

Interstate Nat. Gas Co. No. 46 fee, SE NE sec. 25-20-3e. Set 12-in. 166 ft.

Southern Carbon Co. No. 3 Grayling, NE SW sec. 28-21-4e. Set 8-in. 2,065 ft.

Vernon Parish

Llano Del Rio Co. No. 2 Gulf Lbr. Co., 1,285 ft. S, 1,000 ft. W, NE cor. sec. 7-1n-9w. S.D. 2,960 ft.

Webster Parish

J. L. Edwards No. 1 Hooper, 330 ft. S and E, NW cor. SW sec. 3-17-9. Cg. 1,740 ft.

J. P. Evans et al No. 1 T. Crichton, NE SE sec. 35-18-9. Drlg. 3,527 ft.

Ohio Oil Co. No. 1 R. L. Holloway 660 ft. S, 760 ft. W, C sec. 23-21-10. Cg. 6,590 ft.

EAST TEXAS

(Border Counties)

Cass County

American Liberty Oil Co. No. 1 D. A. Maxie, John Collum Sur. Drlg. 5,634 ft.

American Liberty Oil Co. No. 1 Marcus Rembo, J. H. Reeves Sur. M.I. rig.

United Gas Pub. Ser. Co. No. 1 J. R. Jones Unit, Ben Murray Sur. Cg. 6,007 ft.

United Gas Pub. Ser. Co. No. 2 J. R. Jones Unit, Ben Murray Sur. Comp.; 72 bbls., 5,985 ft.

Harrison County

R. C. Payne et al's No. 1 Lowery, H. D Spain Sur. P.B. to 3,524 ft.

Marion County

Ed S. Holman's No. 1 Henderson, R. Bennington Sur. P.B. to 2,443 ft.

Panola County

George Hudson et al's No. 1 J. F. Nail, McGeary Sur. Set 8-in. 40 ft.; fshg. for core bbl. at 2,345 ft.

Geo. Le Grand No. 1 P. J. Wardleigh, A. Thompson Sur. Set 10-in. 62 ft.

ARKANSAS

Arkansas County

Ark. O. & G. Co. No. 3 Fischer, 250 ft. S, 200 ft. E, NW cor. NE NW sec. 6-4w. R.U.; W.O.

Ashley County

Seaboard Oil Corp. No. 2 fee, NW cor. NW NE sec. 28-17-4. Cg. 2,494 ft.

Clark County

Boris Tripanoff, tr., No. 1 W. Gibbons, sec. 27-8-18. Arranging to test 557 ft.

Dallas County

Kel-Mac Lease & Royalty Co. No. 2 R. Owens, NW cor. NW SW sec. 26-10-16. R.U.

Hempstead County

Dixie Drlg. Co. No. 1 Wheatley, 330 ft. S, 30 ft. E, NW cor. SW NE sec. 14-11-26. R.U. and S.D.

Fitzwater et al No. 2 Lafferty, C NW sec. 17-14-24. Arranging set csg. 1,986 ft.

Murdock-May & Easton No. 1 Conway est., 330 ft. N and E, SW cor. NW SW sec. 17-14-24. Set 12½-in. 80 ft.; S.D. 120 ft.

LaFayette County

Earl F. Fox No. 2 Coleman Bros., NE NE sec. 30-16-24. S.D. 3,760 ft.

Erwin & Leach No. 3 Bodcaw Lbr. Co., 330 ft. S and E, NW cor. sec. 20-16-13. Drlg. 4,390 ft.

Joe Modisett No. 1 Red River Lbr. Co., C SW SW sec. 21-19-14. Drlg. 3,580 ft.

Transportation Pet. Co. No. 1 Cockran, 330 ft. S and W, NE cor. SE sec. 26-19-25. Tested S.W. and S.D. 3,675 ft.

Miller County

Odell Hinson No. 1 Montana Realty Co., NE cor. NW NW sec. 3-17-28. Set 12½-in. csg. 238 ft.

King Oil Corp. No. 1 G. W. Crank, SW NE sec. 19-16-25. S.D.; W.O. 3,906 ft.; (corrected).

C. V. Lenz No. 8 Dale, sec. 24-15-26. R.U.

L. H. Mahon et al No. 1 Miller Land & Timber Co., SW cor. SE sec. 29-18-27. S.D. 1,812 ft.

Ouachita County

Grigsby & Aarner No. 1 Burris, 330 ft. N and E, SW cor. NW NE sec. 19-1s-19. D.&A. 4,017 ft.

L. L. McDonald No. 1 Langley, 330 ft. N and E, SW cor. NE SW sec. 19-16-15. S.D. 1,700 ft.

Phillips Pet. Co. No. 1 J. D. Reynolds, 330 ft. N and W, SE cor. SE NW sec. 27-15-15. Drlg. 4,408 ft.

J. D. Reynolds No. 1 McKenzie, 204 ft. S, 300 ft. W, NE cor. SE SW sec. 36-16-16. W.O.S.R. 1,970 ft.

W. B. Street, trustee No. 1 Roth & Cartier, 330 ft. N and E, SW cor. SW NE. D.&A. 2,202 ft.

Union County

Arkansas Southern Oil Co. No. 1 F. R. Laney, sec. 30-19-16. Installing larger rig. 175 ft.

J. C. Buebee No. 1 Essell, SW cor. NE NW sec. 13-17-15. Drlg. 2,912 ft.

J. C. Buckbee, tr. No. 1 Sloan, 330 ft. N and E, SW cor. SE NW. W.O.S.R. 2,160 ft.

Ohio Oil Co. No. 4 R. Furlough, SE NW sec. 12-17-14. Cg. 3,150 ft.

LA.-ARK. PROVEN

NORTH LOUISIANA

Caddo—Bodessa

Ark.-La. Gas Co. No. 8 Bodessa O. & Land Co., 330 ft. S and E., NW cor. SE NE sec. 22-23-16. Set 7-in. 5,960 ft.; T.D. 5,985 ft.

Ark.-La. Gas Co. No. 9 Bodessa O. & Land Co., 330 ft. S, 520 ft. W, NE cor. SE SE sec. 13-23-16. Set 7-in. 5,978 ft.; T.D. 6,003 ft.

Ark.-La. Gas Co. No. 10 Bodessa O. & Land Co., 330 ft. S and W, NE cor. SE NE sec. 23-23-16. Set 7-in. 6,012 ft.

Ark.-La. Gas Co. No. 11 Bodessa Oil & Land Co., NW cor. NE sec. 23-23-16. Drlg. 5,075 ft.

Ark.-La. Gas Co. No. 12 Bodessa Oil & Land Co., NW SE sec. 23-23-16. R.U.

Ark-La Gas Co. No. 9-A Bodessa Oil & Land Co., SE NE sec. 22-23-16. R.U.

Bartex Pipe Line Co. No. 2 Norton Est., 330 ft. N and E, SW cor. NW NW sec. 17-23-15. Cg. 5,995 ft.

Bartex Pipe Line Co. No. 3 Norton Est., SE NE sec. 18-23-15. Drlg. 3,300 ft.

Bartex Pipe Line Co. No. 1 Robinson, C E½ NE SE sec. 18-23-15. Fsg. for D.S. 6,028 ft.

Bartex Pipe Line Co. No. 2 Robinson, center W½ NW SW sec. 17-23-15. Set 7-in. 6,029 ft.; T.D. 6,057 ft.

Bartex Pipe Line Co. No. 2 Rodessa Oil & Land Co., NE SE sec. 13-23-15. Set 16-in. 254 ft.; set 10¾-in. 2,335 ft.

S. P. Borden No. 1 K.C.S., NW cor. SW sec. 23-23-16. Set 13⅜-in. csg. 290 ft.; drlg. 1,250 ft.

Danciger O. & R. Co. No. 1 J. F. Neugent, C Lot 3, Blk. 12, sec. 23-23-16. R.U.

J. Edward Jones No. 1 Neugent, 25 ft. N and E, SW cor. Lot 14, Blk. 13, sec. 23-23-16. Comp.; 185 bbls. distillate daily 6,005 ft.

Haynes Prod. Co. No. 10 Lawton, NE SW sec. 14-23-16. Set 12½-in. csg. 267 ft.; set 10¾-in. csg. 2,085 ft.; drlg. 4,109 ft.

Haynes Prod. Co. No. 3 Tyson, NE cor. NW NE sec. 14-23-16. Comp.; 65 B.P.H., 6,040 ft.

Haynes Prod. Co. No. 3 Otwell, SW cor. sec. 14-23-16. Set 12½-in. csg. 275 ft.; set 10¾-in. csg. 2,085 ft.; drlg. 3,435 ft.

Haynes Prod. Co. No. 4 Otwell, SE cor. sec. 15-23-16. Set 12½-in. csg. 275 ft..

Haynes Prod. Co. No. 2-B Pitts, SE cor. NW SE sec. 12-23-16. Set 12½-in. csg. 275 ft.

Haynes Prod. Co. No. 4 Tyson, NW cor. NW NE sec. 14-23-16. Set 7-in. 5,909 ft.; T.D. 5,919 ft.

R. W. Norton No. 1 J. Elder Unit, NE cor. sec. 23-23-16. Drlg. 5,030 ft.

Lyons & Neely No. 1 Blaxton, C Lot 11 and 12, Blk. 22, sec. 22-23-16. Set 13⅜-in. 250 ft.; set 9⅝-in. 2,032 ft.

M. H. Marr No. 3 Hunter, NW cor. SW sec. 13-23-16. Drlg. 5,449 ft.

M. H. Marr No. 4 Hunter, 330 ft. S, 1,316 ft. E, NW cor. SW sec. 13-23-16. Testing 6,047 ft.

M. H. Marr No. 1 Peak, SW SE sec. 11-23-16. Set 10¾-in. 2,052 ft.; drlg. 3,535 ft.

R. W. Norton No. 1 Spearman Unit, 1,980 ft. N, 1,155 ft. W, SE cor. sec. 18-23-15. Set 7-in. 5,942 ft.; T.D. 6,575 ft.

R. W. Norton No. 1 Atkins, 330 ft. N and W, SE cor. NE NE sec. 18-23-15. Cg. 6,020 ft.

R. W. Norton No. 1 Slattery, NW cor. sec. 23-23-16. Set 9⅝-in. 2,089 ft.; drlg. 3,850 ft.

R. W. Norton No. 2 Tyson heirs, 330 ft. N and E, SW cor. SE NW sec. 13-23-16. Comp.; 16 B.P.H., 6,065 ft.

Travis et al No. 1 Raney, 990 ft. W of C sec. 17-23-15. Drlg. 5,160 ft.

Tri-State-Williams & Peterbaugh No. 1 Ellis, Lot 2, Blk. 20, Townsite, sec. 23-23-16. Drlg. 3,655 ft.

United Gas Pub. Ser. Co. No. 5 Ardis & Co., SW SE sec. 14-23-16. Drlg. 5,075 ft.

United Gas Pub. Ser. Co. No. 6 Ardis & Co., SE cor. sec. 14-23-16. Set 13⅜-in. 316 ft.; set 9⅝-in. 2,137 ft.

United Gas Pub. Ser. Co. No. 2 Brewer Unit, 457 ft. S, 578 ft. E, NW cor. sec. 29-23-16. Set 7-in. 6,014 ft.; T.D. 6,051 ft.

United Gas Pub. Ser. Co. No. 1 Gipson Unit, NE SW sec. 15-23-16. Drlg. 5,326 ft.

United Gas Pub. Ser. Co. No. 2 V. I. Miller, 330 ft. S, 990 ft. E, NW cor. sec. 14-23-16. Comp.; 27 B.P.H., 6,025 ft.

United Gas Pub. Ser. Co. No. 1 M. L. Pitts, 990 ft. N, 338 ft. E, SW cor. sec. 13-23-16. Set 7-in. 6,061 ft.; T.D. 6,081 ft.

United Gas Pub. Ser. Co. No. 2 M. L. Pitts Unit, NE SW sec. 13-23-16. Drlg. 4,929 ft.

United Gas Pub. Ser. Co. No. 3 M. L. Pitts Unit, NE SW sec. 13-23-16. Set 13⅜-in. csg. 324 ft.; drlg. 1,090 ft.

United Gas Pub. Ser. Co. No. 4 M. L. Pitts Unit, SW cor. sec. 13-23-16. R.U.

United Gas Pub. Ser. Co. No. 1 N. S. Spearman Unit, sec. 18-23-15. Comp.; 66 B.P.H., 6,035 ft.

Untied Gas Pub. Ser. Co. No. 2 Thomas Unit, NE cor. sec. 23-23-16. Drlg. 4,976 ft.

United Gas Pub. Ser. Co. No. 6 Tyson Unit, 306 ft. S, 318 ft. E, NW cor. sec. 13-23-16. Drlg. 5,790 ft.

United Gas Pub. Ser. Co. No. 7 Tyson Unit, 345 ft. N, 336 ft. W, SE cor. sec. 11-23-16. Set 7-in. 5,991 ft.; comp.; 35 B.P.H., 6,049 ft.

United Gas Pub. Ser. Co. No. 8 Tyson Unit, SW NW sec. 13-23-16. Set 10¾-in. at 2,196 ft.; drlg. 3,726 ft.

United Gas Pub. Ser. Co. No. 9 Tyson, NE cor. sec. 14-23-16. Set 13⅜-in. csg. 330 ft.; drlg. 1,965 ft.

United Gas Pub. Ser. Co. No. 7 Rodessa Oil & Land Co., 231 ft. N, 330 ft. W, SE cor. sec. 15-23-16. Set 7-in. 5,952 ft.; T.D. 5,990 ft.

United Gas Pub. Ser. Co. No. 11 Rodessa Oil & Land Co., NW cor. sec. 23-23-16. Drlg. 5,028 ft.

United Gas Pub. Ser. Co. No. 12 Rodessa Oil & Land Co., 1,389 ft. N, 148 ft. W, C sec. 22-23-16. Set 13⅜-in. csg. 329 ft.; drlg. 2,465 ft.

United Gas Pub. Ser. Co. No. 15 Rodessa Oil & Land Co., NE cor. sec. 22-23-16. Drlg. 315 ft.

United Gas Pub. Ser. Co. No. 2 I. L. Young, 1,944 ft. N, 605 ft. W, SE cor. sec. 31-23-16. Drlg. 5,513 ft.

Sabine Parish—Zwolle

Ellis Prod. Co. No. 1 Williams, 330 ft. S and W, NE cor. SE NE sec. 23-7-11. Tested dry; S.D.; W.O. 2,806 ft.

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Shell Oil Co., No. 11 Capitan, Santa Barbara Co.	32- 4-30	1,672	sd. sh. drlg.
Shell Oil Co., No. 12 Capitan, Santa Barbara Co.	32- 4-30	691	sd. sh. drlg.
Honolulu Oil Corp., No. 9 Elwood, Santa Barbara Co.	tideland	6,473	gr. sd. drlg.
Barnsdall-Rio Grande, No. 9-B Elwood, Santa Barbara	tideland	3,415	will deepen
Barnsdall-Rio Grande, No. 12 Elwood, Santa Barbara	15- 4-29	8,096	sd. sh. drlg.
Barnsdall-Rio Grande, No. 16 Elwood, Santa Barbara	15- 4-29	3,584	flow. 602 b.d.
Bankline Oil Co., No. 4 Elwood, Santa Barbara Co.	tideland	3,578	flow. 252 b.d.
Signal Oil Co., No. 7 Elwood, Santa Barbara Co.	tideland	2,962	hd. sh. drlg.
York Oil Co., No. 1 Lompoc, Santa Barbara Co.	33- 8-34	....	bldg. rig
Union Oil Co., No. 1 Santa Maria, Santa Barbara Co.	24-10-34	2,173	sd. sh. drlg.
Santa Barbara Oil, No. 1 Carpinteria, Santa Barbara	29- 4-25	2,290	P.B. 1,950
Union Oil Co., No. 1 Sudden, Santa Barbara Co.	10- 5-35	120	sd. sh. drlg.
Calco Pet. Co., No. 1 Las Posas, Ventura Co.	17- 3-20	2,606	rig cable tools
Duke Oil Co., No. 1 Bardsdale, Ventura Co.	7- 3-19	2,623	sd. sh. drlg.
Bankline Oil Co., No. 1 Sespe, Ventura Co.	36- 5-20	2,022	cleaning out
Ivers, H. A., No. 12 Sespe, Ventura Co.	1- 4-20	1,765	hd. sd. drlg.
Nelson & Co., No. 1 Sespe, Ventura Co.	28- 4-19	1,632	cleaning out
El Rancho Oil Co., No. 1 Shiells Canyon, Ventura Co.	9- 3-19	3,885	gr. sd. drlg.
Bestco Pet. Co., No. 1 Shiells Canyon, Ventura Co.	2- 3-19	418	sd. sh. drlg.
Bankline Oil Co., No. 1 Shiells Canyon, Ventura Co.	3- 3-19	3,853	sd. sh. drlg.
Petroleum Securities, No. 1 Shiells Canyon, Ventura	3- 3-19	....	bldg. rig
The Texas Co., No. 129 Shiells Canyon, Ventura Co.	4- 3-19	3,940	sd. sh. drlg.
Hull, James, No. 1 Santa Susana, Ventura Co.	2- 2-18	1,500	cmtd. 500
Bolsa Chica Oil Co., No. 3 Temescal, Ventura Co.	4- 4-18	640	cleaning out
Argood & Johnson, No. 1 Temescal, Ventura Co.	21- 4-18	....	rigging up
Dawson Oil Co., No. 1 Simi, Ventura Co.	5- 2-17	2,876	hd. sd. drlg.
Stella, E. F., No. 1 Simi, Ventura Co.	6- 2-17	1,097	gr. sh. drlg.
Ventura Expl. Co., No. 1 Saticoy, Ventura Co.	30- 3-22	7,073	P.B. 6,435
General Pet. Corp., No. 2 Oxnard, Ventura Co.	26- 2-23	1,996	cmtd. 1,996
General Pet. Corp., No. 4 Rincon, Ventura Co.	tideland	2,640	sd. sh. drlg.
Rincon Oil Co., No. 3 Rincon, Ventura Co.	tideland	....	rigging up
Continental Oil Co., No. 5 San Miguelito, Ventura Co.	24- 3-24	....	rigging up
Continental Oil Co., No. 1 Javon, Ventura Co.	15- 3-24	5,501	cmtd. 5,240
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	6,298	sd. sh. drlg.
Belmac Drlg. Co., No. 1 McKittrick, Kern Co.	22-29-21	4,797	fish. D.P.
Bergman, H. L., No. 2 McKittrick, Kern Co.	30-30-22	520	sd. sh. drlg.
Chappuis, L. C., No. 1 McKittrick, Kern Co.	34-30-22	....	rigging up
Standard Oil Co., No. 4 North Belridge, Kern Co.	36-27-20	4,931	sd. sh. drlg.
Belridge Oil Co., No. 18-35 North Belridge, Kern Co.	35-27-20	5,383	cmtd. 5,351
Belridge Oil Co., No. 6-1 North Belridge, Kern Co.	1-28-28	7,431	hd. sh. drlg.
Belridge Oil Co., No. 17-35 North Belridge, Kern Co.	35-27-20	4,481	sd. sh. drlg.
Union Oil Co., No. 20 North Belridge, Kern Co.	36-27-20	9,492	P.B. 9,312
Union Oil Co., No. 21 North Belridge, Kern Co.	36-27-20	1,597	sd. sh. drlg.
Continental Oil Co., No. 7 North Belridge, Kern Co.	36-27-20	5,371	sd. sh. drlg.
Alford, J. W., No. 1 Delano, Kern Co.	14-25-27	2,440	cleaning out
C. C. M. Oil Co., No. 14 Kern Front, Kern Co.	23-28-27	2,150	pump. 160 b.d.
C. C. M. Oil Co., No. 15 Kern Front, Kern Co.	23-28-27	1,752	sd. sh. drlg.
Republic Pet. Co., No. 8 Kern Front, Kern Co.	11-28-27	....	rigging up
Republic Pet. Co., No. 9 Kern Front, Kern Co.	24-28-27	....	bldg. rig
General Pet. Corp., No. 5 Kern Front, Kern Co.	14-28-27	712	sd. sh. drlg.
Webber, T. A., No. 1 Kern Front, Kern Co.	14-28-27	985	sd. sh. drlg.
Standard Oil Co., No. 10 Kern Front, Kern Co.	5-28-27	2,750	pump. 65 b.d.
Standard Oil Co., No. 11 Kern Front, Kern Co.	5-28-27	2,584	sd. sh. drlg.

The Texas Co., No. 14 Kern Front, Kern Co.	23-28-27	1,857	cmtd.	
Lloyd Oil Co., No. 1 Kern Front, Kern Co.	3-28-27	1,160	sd. sh. drlg.	
Ohio Oil Co., No. 10 Premier, Kern Co.	32-27-27	2,740	pump. 25 b.d.	
Ausbrit Oil Co., No. 1 Premier, Kern Co.	20-27-27	2,139	P.B. 2,124	
Santa Clara Oil Co., No. 1 Mount Poso, Kern Co.	7-26-28	1,608	cleaning out	
General Petroleum, No. 17 Mount Poso, Kern Co.	16-27-28	1,813	cmtd. 1,719	
Baker-Grover Co., No. 4 Mount Poso, Kern Co.	33-27-28	....	rigging up	
Cal. Coast-Apex Oil Co., No. 1 Mount Poso, Kern Co.	36-26-27	....	rigging up	
The Texas Co., No. 10 Mount Poso, Kern Co.	4-27-28	1,759	pump. 410 b.d.	
Poso Petroleum Co., No. 1 Mount Poso, Kern Co.	2-27-27	....	bldg. rig	
Woods & Bailey, No. 1 McFarland, Kern Co.	16-26-26	3,295	sd. sh. drlg.	
Dixie Lee Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	3,772	flow. 142 b.d.	
Moschbach Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	....	bldg. rig	
The Texas Co., No. 1 Fruitvale, Kern Co.	26-29-27	4,659	dry; abd.	
Magnet Oil Co., No. 1 Fruitvale, Kern Co.	21-29-27	1,977	sd. sh. drlg.	
H. L. J. Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	....	rigging up	
Western Gulf Oil Co., No. 22 Fruitvale, Kern Co.	27-29-27	....	rigging up	
Mohawk Oil Co., No. 10 Fruitvale, Kern Co.	23-29-27	....	rigging up	
North American, No. 1 Mountain View, Kern Co.	5-31-29	6,460	sd. sh. drlg.	
Hogan Pet. Co., No. 10 Mountain View, Kern Co.	29-30-29	6,049	cmtd. 5,715	
Hogan Pet. Co., No. 11 Mountain View, Kern Co.	32-30-29	4,691	sd. sh. drlg.	
Hogan Pet. Co., No. 12 Mountain View, Kern Co.	32-30-29	....	bldg. rig	
Buffalo Oil Co., No. 2 Mountain View, Kern Co.	19-30-29	....	rigging up	
Sheldon Oil Corp., No. 1 Mountain View, Kern Co.	19-30-29	5,150	pump. 100 b.d.	
Wood-Callahan Oil Co., No. 2 Mountain View, Kern Co.	25-30-28	5,905	O.S. drlg.	
Mohawk Oil Co., No. 16 Mountain View, Kern Co.	30-30-29	6,035	completing	
Mohawk Oil Co., No. 18 Mountain View, Kern Co.	30-30-29	4,190	sd. sh. drlg.	
Ohio Oil Co., No. 3 Mountain View, Kern Co.	33-30-29	5,150	redrlg. 3,031	
Allied Pet. Corp., No. 1 Mountain View, Kern Co.	19-30-29	4,562	sd. sh. drlg.	
Treasure Oil Co., No. 1 Mountain View, Kern Co.	12-30-28	....	rigged up	
Shell Oil Co., No. 7 Mountain View, Kern Co.	32-30-29	6,050	P.B. 6,038	
Shell Oil Co., No. 8 Mountain View, Kern Co.	32-30-29	5,200	cleaning out	
Shell Oil Co., No. 9 Mountain View, Kern Co.	32-30-29	2,761	sd. sh. drlg.	
Shell Oil Co., No. 10 Mountain View, Kern Co.	32-30-29	2,143	sd. sh. drlg.	
Shell Oil Co., No. 11 Mountain View, Kern Co.	32-30-29	....	rigging up	
Standard Oil Co., No. 23 Mountain View, Kern Co.	13-30-28	5,596	reaming	
Standard Oil Co., No. 24 Mountain View, Kern Co.	13-30-28	5,285	cleaning out	
Standard Oil Co., No. 25 Mountain View, Kern Co.	13-30-28	5,240	sd. sh. drlg.	
Jergins Trust, No. 5 Mountain View, Kern Co.	24-30-28	5,960	P.B. 5,727	
Ohio Oil Co., No. 1 Rio Bravo, Kern Co.	1-30-25	3,191	sd. sh. drlg.	
Shell Oil Co., No. 1 Stevens, Kern Co.	29-30-26	6,775	sd. sh. drlg.	
Shell Oil Co., No. 11 Round Mountain, Kern Co.	7-28-29	1,720	cmtd. 1,715	
Heim & Pruitt, No. 1 Round Mountain, Kern Co.	17-28-29	1,352	sd. sh. drlg.	
California Western Oil, No. 8 Round Mountain, Kern	7-28-29	1,578	pump. 198 b.d.	
California Western Oil, No. 9 Round Mountain, Kern	7-28-29	762	sd. sh. drlg.	
Barnsdall Oil Co., No. 3 Round Mountain, Kern Co.	7-28-29	1,950	pump. 280 b.d.	
Barnsdall Oil Co., No. 4 Round Mountain, Kern Co.	7-28-29	....	rigging up	
Honolulu Oil Corp., No. 12 Round Mountain, Kern Co.	18-28-29	2,100	pump. 291 b.d.	
Honolulu Oil Corp., No. 13 Round Mountain, Kern Co.	18-28-29	1,981	sd. sh. drlg.	
Bauer Oil Co., No. 1 Edison, Kern Co.	21-30-29	3,157	cmtd. 2,900	
M. & L. Oil Co., No. 1 Edison, Kern Co.	23-30-29	2,948	resume work	
Jergins Trust, No. 22 Edison, Kern Co.	22-30-29	1,140	sd. sh. drlg.	
Jergins Trust, No. 23 Edison, Kern Co.	23-30-29	....	rigging up	
Buckeye Union Oil Co., No. 1 Edison, Kern Co.	22-30-29	2,494	sd. sh. drlg.	
Corbett, R. E., No. 1 Edison, Kern Co.	23-30-29	1,560	sd. sh. drlg.	
Whittier-Santa Fe Oil Co., No. 1 Edison, Kern Co.	21-30-29	2,300	sd. sh. drlg.	
Monterey Expl. Co., No. 5 Edison, Kern Co.	14-30-29	2,699	P.B. 1,800	
The Texas Co., No. 1 Edison, Kern Co.	23-30-29	....	rigged up	
General Pet., No. 14 Edison, Kern Co.	24-30-29	1,458	cmtd.	
General Pet. Corp., No. 1 Elk Hills, Kern Co.	5-30-24	5,895	cleaning out	
Caloren Oil Co., No. 1 Midway, Kern Co.	27-32-23	2,230	suspended	
Gibson Oil Co., No. 2 Maricopa, Kern Co.	6-11-23	....	location	
General Pet. Corp., No. 1 Maricopa, Kern Co.	6-11-23	....	rigging up	
Chief Oil Co., No. 1 Maricopa, Kern Co.	6-11-23	4,468	pump. 15 b.d.	
Standard Oil Co., No. 24 Midway-Sunset, Kern Co.	36-12-24	2,201	cleaning out	
Standard Oil Co., No. 25 Midway-Sunset, Kern Co.	36-12-24	2,106	cleaning out	
Standard Oil Co., No. 218 Midway-Sunset, Kern Co.	33-32-24	3,032	pump. 490 b.d.	
Alford Oil Co., No. 4 Maricopa, Kern Co.	25-12-24	753	sd. sh. drlg.	
Hallmark Oil Co., No. 4 Maricopa, Kern Co.	25-12-24	2,808	completing	
Cal.-Com'l Oil Co., No. 9 Midway-Sunset, Kern Co.	26-32-23	1,697	br. sh. drlg.	
Pet. Drlg. & Expl. Co., No. 2 Maricopa, Kern Co.	25-12-24	2,296	redrlg. 1,650	
Jerman, R. W., No. 1 Midway-Sunset, Kern Co.	31-12-23	2,194	sd. sh. drlg.	
Evans, H. B., No. 12 Midway, Kern Co.	35-32-23	1,991	sd. sh. drlg.	
Ohio Oil Co., No. 6 Buena Vista Lake, Kern Co.	32-31-26	....	bldg. rig	
Superior Oil Co., No. 1 Buena Vista Lake, Kern Co.	6-32-25	....	rigging up	
Silver Gate Oil & Gas Co., No. 1 Tejon, Kern Co.	7-10-19	3,005	redrlg. 2,811	
Reserve Oil & Gas Co., No. 5 Tejon, Kern Co.	2-10-19	2,585	suspended	
Reserve Oil Co., No. 1 Tejon, Kern Co.	33-11-19	6,032	cmtd. 4,705	
Seaboard Oil Co., No. 3 Huron, Fresno Co.	30-16-14	3,243	dry.; abd.	
Seaboard Oil Co., No. 4 Huron, Fresno Co.	10-16-13	....	rigging up	
Conlon, J. M., No. 1 Coalinga, Fresno Co.	30-19-15	560	sd. sh. drlg.	
Standard Oil Co., No. 1 South Coalinga, Fresno Co.	36-21-14	....	bldg. rig	
Union Oil Co., No. 1 Lillis-Welsh, Fresno Co.	24-21-16	11,127	P.B. 10,722	
K. N. D. A., No. 2 Kettleman North, Fresno Co.	20-21-17	3,954	sd. sh. drlg.	
K. N. D. A., No. 54 Kettleman North, Fresno Co.	24-21-16	8,828	flow. 1,401 b.d.	
K. N. D. A., No. 74 Kettleman North, Fresno Co.	30-21-17	....	rigged up	
K. N. D. A., No. 36 Kettleman North, Kings Co.	36-22-18	9,500	cleaning out	
K. N. D. A., No. 54 Kettleman North, Kings Co.	26-22-18	8,285	gr. sd. drlg.	
Standard Oil Co., No. 25 Kettleman North, Fresno Co.	19-21-17	....	bldg. rig	
Standard Oil Co., No. 65 Kettleman North, Fresno Co.	19-21-17	....	bldg. rig	
Standard Oil Co., No. 72 Kettleman North, Fresno Co.	19-21-17	....	rigging up	
Standard Oil Co., No. 2 Kettleman Middle, Kings Co.	29-23-19	8,110	fishing	
Petroleum Securities, No. 2 Kettleman Middle, Kings	30-23-19	9,332	P.B. 4,705	
Royalty Service Corp., No. 1 Pyramid Hills, Kings Co.	16-24-18	3,880	sd. sh. drlg.	
Pismo Pet. Corp., No. 1 Pismo, San Luis Obispo Co.	5-32-13	....	rigging up	
Emerich Oil Co., No. 1 Cholame, San Luis Obispo Co.	23-32-22	1,871	hd. sd. drlg.	
United Oil Co., No. 1 Cholame, San Luis Obispo Co.	2-32-21	216	sd. drlg.	
Willett Oil Co., No. 1 San Luis, San Luis Obispo Co.	10-25-15	2,687	suspended	
Commonwealth Consd. Gas, No. 2 Tulare Lake, Kings	21-22-20	2,495	sd. sh. drlg.	
Union-Hancock, No. 1 Tulare Lake, Kings Co.	28-22-20	3,598	sd. sh. drlg.	
Amerada Pet., No. 7 Tracy, San Joaquin Co.	15- 2-5	4,251	sd. sh. drlg.	
Standard Oil Co., No. 1 McDonald Island, San Joaquin	25- 2-4	761	sd. sh. drlg.	
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24-3	7,050	sd. sh. drlg.	
Shell Oil Co., No. 1 Branch, Monterey Co.	34-24-10	7,222	swabbing	
The Texas Co., No. 2 Eureka, Humboldt Co.	22- 2-1	1,200	sd. sh. drlg.	

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Republic Pet. Co., No. 2 El Segundo, Los Angeles Co.	18- 2-14	5,788	sd. sh. drlg.
Marvin, J. L., No. 1 El Segundo, Los Angeles Co.	7- 2-14	6,662	sd. sh. drlg.
Sovereign Oil Co., No. 1 El Segundo, Los Angeles Co.	22- 2-14	8,766	redrlg. 4,980
Cone Oil Co., No. 1 Lawndale, Los Angeles Co.	26- 2-14	5,386	sd. sh. drlg.
Shell Oil Co., No. 1 Moneta, Los Angeles Co.	22- 2-14	5,970	sd. sh. drlg.
Big Ben Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 2-14	....	bldg. rig
Sioux Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 2-14	....	bldg. rig
White Five Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 2-14	2,880	cmtd. 2,455
Sterling Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 2-14	3,362	pump. 202 b.d.
Dumas-Lewis Oil Co., No. 2 Redondo, Los Angeles Co.	6- 4-14	....	bldg. rig
B. & N. Oil Co., No. 1 Redondo, Los Angeles Co.	18- 4-14	1,275	sd. sh. drlg.
Rennek Oil & Gas Co., No. 1 Redondo, Los Angeles Co.	8- 4-12	1,775	sd. sh. drlg.
C. C. M. Oil Co., No. 23 Torrance, Los Angeles Co.	8- 4-14	4,550	sd. sh. drlg.
West American Oil Co., No. 1 Dominguez, Los Angeles	3- 4-13	7,093	sd. sh. drlg.
Shell Oil Co., No. 1 Long Beach, Los Angeles Co.	12- 4-13	6,035	cmtd. fish
Barnsdall Oil Co., No. 15 Rosecrans, Los Angeles Co.	18- 2-13	4,955	cleaning out
Mars Oil Co., No. 1 Athens, Los Angeles Co.	7- 2-13	4,850	redrlg. 3,520
Continental Oil Co., No. 28 Seal Beach, Los Angeles	2- 5-12	5,628	sd. sh. drlg.
Standard Oil Co., No. 27 Seal Beach, Los Angeles Co.	3- 5-12	....	bldg. rig
Engler & Long, No. 1 Artesia, Los Angeles Co.	25- 3-12	5,888	cleaning out
Clayton, C. L., No. 1 Long Beach, Los Angeles Co.	31- 2-12	6,765	P.B. 4,750
Standard Oil Co., No. 16 Inglewood Deep, Los Angeles	8- 2-14	3,023	flow. 470 b.d.
Standard Oil Co., No. 17 Inglewood Deep, Los Angeles	8- 2-14	1,280	sd. sh. drlg.
Ohio Oil Co., No. 18 Del Rey, Los Angeles Co.	22- 2-15	6,127	sd. sh. drlg.
Eastern Oil Co., No. 1 Del Rey, Los Angeles Co.	22- 2-15	6,096	sd. sh. drlg.
Royalty Service Corp., No. 6 Del Rey, Los Angeles Co.	22- 2-15	4,652	sd. sh. drlg.
Herndon Dev. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,622	swabbing
Union Oil Co., No. 20 Del Rey, Los Angeles Co.	27- 2-15	6,188	pump. 160 b.d.
Union Oil Co., No. 21 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
Yant Pet. Corp., No. 1 Newhall, Los Angeles Co.	1- 3-16	1,762	hd. sh. drlg.
Yant Pet. Corp., No. 2 Newhall, Los Angeles Co.	36- 4-16	....	rigged up
Eyer Pet. Co., No. 1 Compton, Los Angeles Co.	20- 4-13	3,794	suspended
Standard Oil Co., No. 79 Montebello, Los Angeles Co.	2- 2-12	5,200	sd. sh. drlg.
Standard Oil Co., No. 80 Montebello, Los Angeles Co.	2- 2-12	5,767	flow. 94 b.d.
Standard Oil Co., No. 81 Montebello, Los Angeles Co.	2- 2-12	2,630	cleaning out
Standard Oil Co., No. 82 Montebello, Los Angeles Co.	2- 2-12	6,498	fish. D.P.
Standard Oil Co., No. 83 Montebello, Los Angeles Co.	2- 2-12	2,690	sd. sh. drlg.
Standard Oil Co., No. 84 Montebello, Los Angeles Co.	2- 2-12	1,264	sd. sh. drlg.
Butler, C. R., No. 1 Montebello, Los Angeles Co.	14- 2-10	3,960	sd. sh. drlg.
Womac, Inc., No. 3 Montebello, Los Angeles Co.	4- 2-11	1,986	sd. sh. drlg.
Woodward, J. A., No. 1 Montebello, Los Angeles Co.	4- 2-11	3,112	deepening
The Texas Co., No. 13 Montebello, Los Angeles Co.	5- 2-11	7,312	P.B. 6,932
Universal Consd., No. 4 Montebello, Los Angeles Co.	5- 2-11	7,300	sd. sh. drlg.
Universal Consd., No. 6 Montebello, Los Angeles Co.	5- 2-11	....	rigging up
Wilshire Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	6,352	redrlg. 5,310
Richfield Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	2,471	sd. sh. drlg.
Richfield Oil Co., No. 2 Montebello, Los Angeles Co.	5- 2-11	....	bldg. rig
North American, No. 1 Montebello, Los Angeles Co.	30- 1-10	5,952	dry; abd.
North American, No. 2 Montebello, Los Angeles Co.	5- 2-11	3,260	sd. sh. drlg.
St. Helens Pet. Co., No. 7 Montebello, Los Angeles Co.	5- 2-11	....	bldg. rig
Oil & Gas Associates, No. 1 Pico, Los Angeles Co.	9- 2-11	3,818	fishing
Great Coastal Oil Co., No. 1 Elsinore, Riverside Co.	36- 5-5	2,211	hd. sd. drlg.
Stevens, F. E., No. 1 Corona, Riverside Co.	27- 3-7	....	rigging up
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	863	cleaning out
Twentieth Century Oil Co., No. 1 Huntington, Orange	36- 5-11	5,170	P.B. 4,495
Hillman & Long, No. 1 Westminster, Orange Co.	14- 5-11	3,644	sd. sh. drlg.
Standard Oil Co., No. 1 Anaheim, Orange Co.	36- 3-9	2,656	rig to pump
Union Oil Co., No. 29 Chapman Richfield, Orange Co.	30- 3-9	1,031	sd. sh. drlg.
Continental Oil Co., No. 1 Yorba, Orange Co.	21- 3-9	3,380	sd. sh. drlg.

NORTH CENTRAL TEXAS WILDCATS

Week Ending March 21

Archer County

Consolidated Oil Co. No. 1 W. H. Portwood-AA, T.E.&L. Sur. No. 1,579. Loc.

Continental Oil Co. No. 1 Virgil Seay, Blk. 63, Harris Subd. Drlg. 930 ft.

Deep Oil Dev. Co. No. 11, Lease 4, L. F. Wilson, sec. 76, A.T.N.C. Lands. C.O. after shot; est. 120 bbls.; P.O.P.

C. B. Long No. 1 J. H. Turbeville-A, Blk. 155, R. Carson Sur. No. A-89. Spudding.

Luther Hedrick et al No. 1 M. B. Kay, Blk. 3, Harris Subd. R.U.

Wilson-Ligon No. 1 M. B. Kolb, Blk. 116, Harris Subd. R.U.R.

Baylor County

Consolidated Oil Co. No. 1 Portwood "Y," 600 ft. N and 150 ft. W. SE cor. NE¼ T.E.&L. Sur. No. 3,138. S.O. 1,412-17 ft.; W.O.C.

Hardgrave & McCulloch No. 1 Louis Hrachrik, sec. 5, B.B.B.&C. Sur. A-70. S.D. 300 ft.

Morris & Spoonts No. 1 D. K. Martin, sec. 212, T.&N.O. Sur. A-748. Drlg. 960 ft.

Morris & Spoonts No. 1 J. M. Parker, B.B. B.&C. Sur., sec. 148, Blk. A. Spudded and S.D.

W. P. Morris et al No. 1 C. T. Porter. Edward Brown Sur. Sand with S.O. and gas 1,320-24 ft.; T.D. 1,333 ft.; fshg.

Cooke County

Anderson & Kerr No. 1 F. A. Bruthmeyer, 909 ft. N and 491 ft. W. SE cor. 120-ac., H. Stroud Sur. A-930. Recmtng.

Anderson & Kerr No. 1 C. A. Stelzer, T. B. Stroud Sur. No. A-950. Drlg.

Cain & Chandler No. 1 J. B. Burch, J. McWilliams Sur. A-658. Drlg.

Hardin Oil Co. No. 1 J. G. Bonner, J. Lindheimer Sur. Cg. 1,868 ft.

H. E. Hoover et al No. 1 G. C. Cartwright. B. J. Thompson Sur. A-1,008. Drlg. 1,465 ft.

Kingery Bros. No. 1 S. D. Meador, G. W. Long Sur. A-570. Drlg. 1,030 ft.

Lanier et al No. 1 Thetford, S.P.R.R. Sur. A-987. Drlg. 530 ft.

L. A. Long et al No. 1 Sarles, Hunt County School Lands Sur. A-440. Drlg. 2,140 ft.

Hank Masterson No. 1 R. J. Timms, J. W. McPherson Sur. A-696, 1,500 ft. S and 150 ft. W. NE cor. farm. Drlg. 1,720 ft.

Mills & Carey No. 1 A. M. Bezner, J. B. Trenary Sur. Fshg. at 670 ft.

Mullin et al No. 1 Spares, B. P. Tishler Sur. A-1,033. Drlg. 300 ft.

N. Newburn No. 1 Dotson, Wm. Campbell Sur. A-238. Fsg. at 1,540 ft.

Charles Newsom No. 1 T. Wiesman, Blk. 9, Thos. Scott Sur. A-900. C.O.

Petroleum Producers No. 1 J. W. Mount, J. C. Meeks Sur. A-758. Drlg. 1,127 ft.

H. F. Potts No. 1 S. D. Meador, B.B.B.&C. Sur. A-138. Drlg. 400 ft.

L. E. Rader No. 1 McCubbin, R. Wheelock Sur. A-1,684. Drlg. 1,213 ft.

Raye Oil Corp. No. 1 Reiter, G. M. Casey Sur. A-198. Sand with S.O. 936-43 ft. and 944-45 ft. T.D. 986 ft.; waiting for spudder.

W. F. Russell No. 1 Belle Payne, Marshall University Sur. A-620. Spudded and S.D.

J. M. Russell et al No. 1 B. B. Bawley, Blk. 24, John Barnett Sur. C.O.

Ruwaldt-Couch No. 1 Sarah Goff, S.P.R.R. Sur. A-982. Drlg. 1,400 ft.

Ruwaldt-Couch No. 1 Fleitman, L. Mikel Sur. A-747. Drlg. 750 ft.

Sunray Oil Co. et al No. 1-A A. C. McCall, W. H. White Sur. A-1,124. Drlg. 2,155 ft.

R. F. Thompson No. 1 F. Trubenback, P. Davidson Sur. A-337. Drlg. 208 ft.

Whitehead et al No. 1 W. Reed, F. Earthman Sur. A-349. R.U. std. tools; spdng.

Woodbine Oil Co. No. 1 Potter & Potter, J. Gorham Sur. Drlg. 900 ft.

Denton County

Jack Caudle et al No. 1 B. D. Jones, John Morton Sur. Spudded.

Oil Finance Corp. No. 1 J. S. Gambill, T. Burress Sur. Drlg. 815 ft.

C. S. Hoad No. 1 Travelers Insurance Co., Wm. A. Thompson Sur. A-1,238. Spudding 310 ft.

Foard County

Humble O. & R. Co. No. 1 Burnett, sec. 16, Blk. X, S.P.R.R. Sur. Drlg. 2,520 ft.

Jack County

Bryson Oil & Gas Co. No. 1 G. E. Evett, Geo. Hardesty Sur. A-294. Drlg. 2,470 ft.

I. W. Cole et al No. 1 Mrs. D. C. Clayton, Lewis Knight Sur. A-324. Rig.

R. M. Gillespie No. 1 B. F. Rankin, Jacob Ash Sur. A-8. Drlg. 2,970 ft.

W. H. Hammon No. 1 G. E. Evett, H. Plaster Sur. Loc.

C. Kadane No. 1 E. F. Smith, S.P.R.R. Sur. A-552. Drlg. 250 ft.

E. C. Lawson et al No. 1 Patterson, Lewis Knight Sur. A-324. Drlg. 2,485 ft.

Nelson Oil Synd. No. 1 J. P. McCoy, A. S. Ensworth Sur. Drlg. 2,730 ft.

Ray & Staniforth No. 1 L. J. Hestor, J. Ash Sur. A-8. Drlg. 400 ft.

Montague County

A. Gutowsky et al No. 1 J. E. Lemmon, Blk. 13, C. K. Hamm Sur. A-322. Drlg. 800 ft.

E. T. Hart No. 1 W. L. Davis, sec. 12, Jack Co. School Lds. Drk.

J. F. Hart No. 1 W. M. Talley, J. Perrin Sur. T.D. 1,740 ft.; fsg.

L. C. Heydrick No. 1 J. B. Lawrence, M. Burnside Sur. A-14. Drk.

Jim Seeds et al No. 1 Coombs, sec. 54, M.E.P.&P. Sur. S.D. 1,310 ft.

J. M. Holmes No. 1 H. D. Field, sec. 55, M.E.P.&P. Sur. A-528. Drlg. 1,972 ft.

Throckmorton County

Ben Ashe et al No. 1 W. B. Parrott, sec. 961, T.E.&L. Sur. Loc.

Alex M. Snyder No. 1 W. J. Timmons, sec. 793, T.E.&L. Sur. Drlg. 1,080 ft.

Wichita County

Clark et al No. 1 S. P. Gibson, sec. 302. Drlg. 765 ft.

F. P. Cullum No. 1 T. L. Burnett, sec. 4, H.T.&B. Sur. A-752. Drlg. 1,500 ft.

T. F. Hunter No. 1 S. P. Gibson, sec. 301, W.C.S., 1,170 ft. S and W, NE sec. Drlg. 201 ft.

Reno Oil Co. No. 1 W. T. Waggoner-D, sec. 1, S.&M. Sur. A-393. Spudding.

Wilbarger County

Bason Drlg. Co. No. 1 W. T. Waggoner-B, sec. 5, H.T.&C. Sur. Blk. 5, Loc.

Franklin Oil Co. No. 1 D. G. Feller et al, sec. 108, Blk. 14, H.&T.C. Sur. S.D. 1,570 ft.

Lane & Simons No. 1 Allison, sec. 43, H. &T.C. Sur., Blk. 12. Spudded and S.D.

Ed S. Smith et al No. 1 W. T. Waggoner, sec. 50, Blk. 14, H.&T.C. Sur. Sd. 1,850-53 ft.; W.O.C.

Smith No. 1 S. A. Dill et al, sec. 32, Blk. 14, H.&T.C. Sur. S.D. 2,090 ft.

Wheeler et al No. 1 W. T. Waggoner, sec. 99, H.&T.C. Sur., Blk. 14. Drlg. 810 ft.

Young County

L. T. Burns No. 1 S. M. J. Benson, T.E.&L. Sur. 1,478. Drlg. 740 ft.

Christie Bros. No. 1 Primitive Baptist Church, S. L. Hill Sur. A-126. Drlg. 3,814 ft.; line; S.O.

C. C. Counts No. 1 W. E. Edwards, T.E.& L. Sur. 71. Loc.

Curtis & Bracken No. 1 Allar Co., H. Garmes Sur. A-104. Drlg. 2,975 ft.

C. E. Knox No. 1 Washam, Blk. 8, sec. 1,412, T.E.&L. Sur. Drlg. 2,100 ft.

Dobbs Oil Co. and McLester No. 1 Laquey, J. Busse Sur. A-1,570. Drlg. 2,665 ft.

Murry R. Hart No. 1 McCluskey, T. J. Mullinax Sur. A-1,004. Drlg. 240 ft.

Nash & Windfohr No. 1 W. S. Simms, D. Franklin Sur. A-1,425. Drlg. 1,750 ft.

C. D. Neff et al No. 1 W. A. Dennis, C. F. Bass Sur. Drlg. 1,310 ft.

Pitzer & West No. 1 Harrell, J. Daily Sur. A-78, Cellar.

Pitzer & West No. 1 McCluskey, sec. 1,104, T.E.&L. Sur. A-327, H.F.W.; U.R. 10-in. to 2,330 ft.; O.S. 2,747-49 ft.; swbg. and C.O.; nice showing.

Pitzer & West No. 1 S. L. Thornton, sec. 1,015, T.E.&L. Sur. A-324. Drlg. 2,250 ft.

Rathke Oil Co. No. 2 J. T. Rogers, S. H. Graham Sur. A-124. Drlg. 2,850 ft.

Roberts Oil Corp. No. 1 Brogden, H. Garmes Sur. A-104. Lime 3,673-3,725 ft.; testing.

E. C. TEXAS WILDCATS

Week Ending March 21

Bowie County

Woodley Pet. Co. No. 1 Lumpkin. Drlg. 1,700 ft.

Grayson County

Olson Drlg. Co. No. 1 Southwestern Life Ins. Co., J. C. Jamison Sur., 6 miles NW of Denison. Elev. 767 ft.; S.D. 4,926 ft.

Franklin County

W. C. Windsor and Humble O. & R. Co. No. 1 King & Hughes, in O. James Sur., 1¼ mi. SW of Talco. Top Georgetown 3,393 ft.; S.D. 4,180 ft.

Gregg County

John Hoover No. 1 Williams, David Hill Sur. S.D. 3,860 ft.

Lamar County

J. Forrester et al No. 1 J. E. Woodward, L. Highton Sur., but in J. W. Woodward Sur., 1 mi. E of Mintel. Top Paluxy 3,060 ft.; elev. 402 ft.; fsg. 3,-700 ft.

Limestone County

C. L. Lytle No. 1 J. L. Thompson, P. Varella Sur., Mexia field. Drlg. 5,325 ft.

Navarro County

W. A. Reiter et al No. 1 T. W. Bounds. 330 ft. from N and E of H.T.&B. Sur. S.D. 31 ft.

Nacogdoches County

Overtex Oil Co. No. 1 Hazelwood, J. L. Ewing Sur., 15 mi. S of Nacogdoches. Drlg. 3,535 ft.

Red River County

Midwest and Texhomia Oil Co. No. 1 Hacker & Hughes, 660 ft. from N and 3,060 ft. from E line of M.E.&P. Sur., 9 mi. NE of Talco. M.I.M.

Orr et al No. 1 Kurth Lbr. Co., 3,960 ft. from N and 600 ft. from W line of E. Smith Sur., center of county. Drk.

Williams et al No. 1 L. and O. Roberts. James Bankston Sur., 2 miles NE of Annona. Elev. 396 ft.; S.D. 725 ft.

Rockwall County

W. H. Carlin No. 1 N. F. Lofland, ¾ mile W of Rockwall, Bowles Sur. S.D. 750 ft.; test failed.

Dodd et al No. 1 Lofland. T.D. 750 ft.

Rusk County

McCallum et al No. 1 E. C. Gary, John Piburn Sur., 5 miles S of Henderson. Elev. 338 ft.; drlg. 3,402 ft.

Pure Oil Co. No. 1 W. H. Faulkner, Wm. Elliott Sur., S of Concord. Drk.

J. W. Shipman et al No. 1 Citizens Natl. Bank, NE cor. of 125-ac. tract, J. J. Y'Barbo Sur., 4 miles NE of Henderson. S.D. 3,487 ft.

Smith County

Beard et al No. 1 Hally, M. Kinsey Sur., 2 mi. SE of Chapel Hill. Elev. 478 ft.; Woodbine 3,938 ft.; drlg. 4,148 ft.

Thompson & Colby No. 1 W. P. Walsh, 1,600 ft. from N and 330 ft. from W line of S. Barnett Sur., 6½ miles NE of Tyler. S.D. 1,171 ft.

Titus County

Howze, Thompson & Peveto No. 1 C. M. Carr, North M. V. Delgado Sur., 2,060 ft. from easterly E line and 1,888 ft. from northerly N line of Sur., 1½ miles E of Talco. T.D. 4,208 ft.; swbng. 400 bbls. day; flowing small stream; to put on pump.

Humble O. & R. Co. No. 1 M. B. Groves. Ben Jones Sur. Pecan Gap 1,605-42 ft.; cut fault at 1,642 ft.; drlg. 3,175 ft.

Jule Alford, tr., No. 1 W. D. Fry, 330 ft. out of most northerly SE cor. of tract, I.P. Stern Sur., 1½ mi. S of Carr well. Drk.

O'Neal, tr. No. 1 O. C. Lillianstern, C of 80 ac., Wm. Canon Sur., 4 mi. SE of Carr well. S.D. 260 ft.

S. W. TEXAS WILDCATS

Week Ending March 21

Atascosa County

Atascosa Trust No. 1 Domsch, 160 ft. S line, 300 ft. E line, 152-ac. lease, J. T. Russell Sur. No. 1,222. Cg. 2,100 ft.; S.O.

Bastrop County

Marts & Beavens No. 4 Riddle, 800 ft. W line, 600 ft. S line tr., Maxmillian Sur. Drlg. 900 ft.

Bee County

Marine Oil Co. No. 1 Hearn, 2,000 ft. E No. 1 Woods, E. Ryan Sur. T.D. 5,935 ft.; pulling tbg.

H. A. Pressey No. 1 Hicks, 1,450 ft. of S line, 150 ft. of W line, lease, J. Uranga grant. Drlg. 120 ft.

Bexar County

J. B. Chew No. 1 Bonkowski, sec. 10, McMinever Sur. D.&A. 1,250 ft.

J. Dupree No. 1 Coffey, Rodriguez Sur. T.D. 1,123 ft.; S.D.

Joe Deupree No. 1 Winters, F. Roderiguez Sur. Drlg. 300 ft.

H. A. Pagenkopf No. 1 Ritteman, 2,500 ft. E line, 500 ft. N line, C. Texada Sur. Drlg. 2,300 ft.

H. V. Schumaker No. 1 Gillette, 465 ft. White road, 235 ft. N line, 49-ac. tract, de Alamis Sur. No. 20. T.D. 390 ft.; S.D.

Brooks County

California Co. No. 1 B. Garcia, 465 ft. N and W lines lease, B. Garcia tract, Salinas Sur. Cg. 4,455 ft.

Dick Young No. 1 Singer, 50 ft. E line, 660 ft. N line, NW¼ SE¼, Sur. 312. Sd. 917-19 ft.; comp.; est. 40 B.P.D.

Dewitt County

Hill Bros. & Koontz No. 1 Herman Riddle, 450 ft. S line, 330 ft. W line, 535-ac. tr., Santos Sur. Drlg. 5,811 ft.

Duval County

Chas. Daubert No. 1 Kreis, 2,600 ft. line, 2,700 ft. E line, Sur. 513. T.D. 3,-506 ft.; D.&A.

Frank Gravis No. 1 C. K. Gravis, 1,650 ft. SE line, 990 ft. SW line, Sur. 250. T.D. 4,502 ft.; fsg.

Howard Pet. Co. No. 1 Ruiz, 2,640 ft. NW line, 660 ft. NE line, Sur. 12. Drlg. 1,-540 ft.

Kepley Prod. Co. No. 1 Sevier, 330 ft. S line, 1,320 ft. E line, Sur. 71. R.U.

Magnolia Pet. Co. No. 1 Yates, 330 ft. S and E lines, Sur. 556. M.I.M.

Santa Clara Oil Co. (Atkins & O'Neil) No. 1 Glasscock, 3,945 ft. E line, 9,085 ft. S line, Book ranch. Concepcion grant. T.D. 6,020 ft.; D.&A.

Stanolind O. & G. Co. No. 3 Farmers Life Ins. Co., 330 ft. S and E lines, Sur. 559. M.I.M.

Edwards County

Paul Teas No. 1 Stewart, C SE¼ sec. 2. G.C.&S.F. Sur. Drlg. sh. 3,036 ft.

Goliad County

Cotton Belt O. & G. Co. No. 1 Lutenbacher, 330 ft. S and W lines, Blk. 25. Goliad Townsite. Drlg. 1,520 ft.

Magnolia Pet. Co. No. 1 Tipton, 330 ft. SE and SW lines, Thorman Sur. M.I.M.

Thompson Drlg. Co. No. 1 J. E. Pettus, 2,750 ft. S line, 750 ft. creek, Barbo Sur. No. 51. T.D. 4,751 ft.; D.&A.

Guadalupe County

Paul Armstrong and J. E. Clark No. 1 Brodnaux, 150 ft. SE cor. 36-ac. tr., King Sur. Drlg. 2,221 ft.

Hidalgo County

Gerald O. & G. Co. No. 1 Nelson Mortgage Co., Blk. 38, Lot A, La Donna Tr. R.U.

Gulf States Oil Co. No. 1 Delta Orchards, 580 ft. from N line, 400 ft. W line, Lot 2, Blk. 73, Las Mestanas grant. T.D. 6,-808 ft.; W.O. orders.

Maxwell-Mundy No. 1 Hid. Wtr. Dist. No. 2, Lot 11, Blk. 20, Alamo Tr. Sd. 652-60 ft.; set csg.; W.O.C.

Quintana Petroleum Co. No. 1 John C. Engleman, Lot 10, Blk. 94, Las Mestanas grant. Cg. sh. 5,455 ft.

Dayle Smith No. 1 Fairbanks & Young, Blk. 44, Por. 46, jurisdiction of Reynosa. T.D. 1,700 ft.; S.D.

Jim Hogg County

S. L. Miller No. 2 Yeager, 777 ft. S line, 150 ft. E line, Blk. 6, Sur. 20. M.I.M.

Rankin Oil Co. No. 1 Vela, Lot 6, Sur. 5. T.D. 3,765 ft.; D.&A.

Jim Wells County

O. W. Killam No. 1 Reynolds, C S half Sur. 28. Drlg. 2,175 ft.

G. M. Richardson No. 1 Garrett, 1,980 ft. S line, 1,640 ft. E line, sec. 5. Drlg. 1,350 ft.

Texon Roy. Co. and Lucey No. 1 Rolston, 330 ft. N and W lines, sec. 17, King Farm Lots. Drlg. 1,612 ft.

Karnes County

J. Owens and MacDowell No. 1 Ruhman, Butler Sur. T.D. 3,715 ft.; D.&A.

Kerr County

Auld and Evans' No. 1 Heffner, 660 ft. N line, 330 ft. E line, Sec. 13, B.S.&F. Sur S.D. 1,451 ft.

Eastland Oil Co. No. 7 Love, 660 ft. N Evans & Gant No. 1 Love, Martinez Sur. No. 1,594. T.D. 1,500 ft.; standing.

Live Oak County

Dirks Bros. No. 1 Dougherty, 330 ft. NW line, 960 ft. NE line, 320-ac. tract Beagle Sur. Sd. 4,508-16 ft.; S.O.; testing sd. 4,656-62 ft.

R. H. Feltner No. 1 J. T. Carter, 1,847 ft. NW line, 350 ft. NE line, 120-ac. tract, sec. 319. S.D. 2,962 ft.

McMullen County

Darby Pet. Corp. No. 3-B Hagist, 330 ft. S line, 990 ft. W line, Sur. 187. Cg. 1,-009 ft.

F. Dayvault No. 1 Matula, 150 ft. S line, 2,462 ft. E line tr., Jas. Garner Sur. T.D. 1,023 ft.; standing.

Magnolia Pet. Co. No. 1 Kincaid, 2,310 ft. W line, 330 ft. N line, Sur. 86. T.D. 3,295 ft.; D.&A.

Magnolia Pet. Co. No. 2 Kincaid, 330 ft. S and E lines, Sur. 86. R.U.

Earl Rowe No. 1 Lee, 330 ft. S and W lines, NE¼ SE¼, sec. 34. T.D. 3,032 ft.; D.&A.

Whisenant & Trenchard No. 1 Roos Bros., C SE¼ SE, Sur. 93. Cg. 2,896 ft.

Medina County

W. C. Campbell's No. 1 McMenemy, 160 ft. S and W lines, Sur. 33. Recmtng. 2,-230 ft.

A. A. Murrell No. 1 fee, Blk. 3, Lot 30, J. DeGant Sur. Sd. 412-20 ft.; comp. on pump; est. 8 B.P.D.

Nueces County

Allen & McCormick No. 1 McBurnett, 660 ft. N line, 330 ft. E line, Lot 2, Robert Shallert ranch. Cg. 3,749 ft.

A. D. Cargray No. 2 Baldwin, 330 ft. N line, 550 ft. E line, Blk. 21, sec. 51. Drlg. 650 ft.

Coker & Lee Bros. No. 1 Geistman, 330 ft. N line, 660 ft. W line, 60-ac. tract, J. R. Ward Sur. No. 316. Drlg. 4,819 ft.

M. F. Hurlburt No. 1 Phillips, sec. 8. Flour Bluff Garden Tr. R.U.

Santa Clara Oil Co. (Atkins & O'Neil) No. 1 Cooke, 990 ft. N line, 330 ft. W line, sec. 14. Set sur. csg.; drlg. plugs.

San Patricio County

Benedum & Trees Oil Co. No. 1 Jones, 1,650 ft. E line, 990 ft. S line, NW¼ sec. 65. Cg. sh. 2,380 ft.

Benedum & Trees Oil Co. No. 2 Welder, sec. 19. Top sd. 4,563 ft.; rmg. 5,051 ft.

Santa Clara Oil Co. (Atkins & O'Neil) No. 4 Welder, 2,300 ft. SE line, 1,791 ft. NE line, 1,250-ac. tract, Villareal Sur. Drlg. 3,600 ft.

Stanolind Oil & Gas Co. No. 1 Floerke, 150 ft. NE line, 1,320 ft. SE line, Lot 5 T.D. 6,511 ft.; D.&A.

Willis Storm No. 1 Nancy Hobbs, 622 ft. NW and SW lines, 30-ac. tr. C.O.; T.D. 1,500 ft.

Starr County

J. H. Clopton No. 3 Kelsey-Bass, sec. 357. Drlg. 417 ft.

Coreta Oil Co. No. 1 Haden, Share 47, Porc. 80. Drlg. 1,900 ft.

Webb County

Austin & Vernon's No. 1 Jeffries, 150 ft. NE line, 1,170 ft. SE line, Blk. 13, Su. 1,453. Drlg. 1,327 ft.

Southwest Drlg. Co. No. 1 R. Lopez, 330 ft. S and W lines, NE¼, Sur. 139. T.D. 3,750 ft.; D.&A.

Willacy County

Shell Pet. Corp. No. 1 Yturria Land & Cattle Co., 990 ft. S and E lines, Share 64, San Juan de Carricitos grant. M.I.M.

Zapata County

Murt Cullinan No. 1-A Gutierrez, Blk. 3, Share 2, Comitas grant. R.U.

Ivan Howard No. 1 Martinez, 4,950 ft. SW line, 330 ft. NW line, Blk. 5, Sur. 206. Set sur. csg. 21 ft.; W.O.C.

J. J. O'Hern's No. 1 Raymond, 330 ft. NW line, 330 ft. NE line Blk 5, Share E Porc. 27. T.D. 2,658 ft.; S.D.

S. W. TEXAS PROVEN

Week Ending March 21

Dirks—Bee County

Devonian Oil Co. No. 4 Young, O'Brien Sur. Set sur. csg.; W.O.C.

Heyser, Heard & Walton No. 12 Young, 220 ft. NW No. 4, F. Rawlins Sur., Abst. 290. Sd. 3,790-3,841 ft.; set csg.; W.O.C.

Illinois Pet. Co. No. 8-B Hahl, 50 ft. NE line, 1,160 ft. NW line, lease, Butler Sur. Sd. 3,892-3,901 ft.; comp.; 22 B.P.H. on ¼-in. choke.

Texas Co. No. 18 Young, Butler Sur. Drlg. 3,100 ft. in sidetracked hole.

Plummer—Bee County

C. Echols No. 1 Plummer, 391 ft. SW line, 150 ft. SE line, F. J. Chessman Sur. Cg. 2,320 ft.

Ray—Bee County

Duncan & Perkins No. 2-A Campbell, B.& B. Sur. Comp.; no gauge; T.D. 3,780 ft.

Magnolia Pet. Co. No. 1 Booth, W. B. Blanchard Sur. Spudding in.

Dale—Caldwell County

Ogden & Reed No. 2 Vickery, 550 ft. NE line, S. Damon Sur. T.D. 1,923 ft.; Serp.; S.O.

Salt Flat—Caldwell County

Witherspoon Oil Co. No. 1 Tiller, 175 ft. N and W lines tract, G. Hinds Sur. T.D. 2,595 ft.; acidizing.

Eagle Hill—Duval County

Marzo Oil Co. No. 2 Hagist, 480 ft. E of No. 1, Sur. 6. T.D. 2,174 ft.; stndg.

Government Wells Pool—Duval County

Central Producers, Inc., No. 3 Luptack, 150 ft. S line, 990 ft. E line, Sur. 41. Drlg. 2,127 ft.

Hoffman—Duval County

Hamill & Smith No. 1 B.C.C., 330 ft. N and E lines, NW¼ NE¼ Sur. 70. No report.

Plymouth Oil Co. No. 1 Cuellar, 330 ft NW and NE lines tr., Sur. 117. Testing 2,874-85 ft.

Forter & Stevens No. 1 Sutherland, 330 ft. S and E lines, Sur. 126. T.D. 3,002 ft.; D.&A.

Rogers & Rogers No. 2 Sutherland, 1,070 ft. S and E lines, E½ Sur. 120. Set sur. csg.; W.O.C.

Rogers & Rogers Drlg. Co. No. 2 Hoffman, 330 ft. E line, 1,698.5 ft. S line, 640-ac. tr., Sur. 118. T.D. 2,903 ft.; swbng.

Standard Oil Co. of Kansas, 330 ft. SW of N line, 80-ac. tr., Sur. 118. Set sur. csg.; W.O. wtr.

Loma Novia—Duval County

Bridwell Oil Co. No. 8 B.C.C., 330 ft. W line, 990 ft. S line, SW¼, Sur. 76. Set csg. on sd.; W.O.C.

Bridwell Oil Co. No. 14 B.C.C., 990 ft. E line, 330 ft. S line, SW¼ Sur. 76. Comp.; no gauge; sd. 2,592-2,601 ft.

Bridwell Oil Co. No. 16 B.C.C., Sur. 76. M.I.M.

Bridwell Oil Co. No. 2-C Hubbard, Sur. 75. Set csg. on sd.; T.D. 2,565 ft.

Bridwell Oil Co. No. 2-C Hubbard, 330 ft. N and E lines, SW¼, Sur. 75. Cg. 2,-570 ft.

Bridwell Oil Co. No. 3-C Hubbard, 330 ft. S and E lines, NW¼, Sur. 75. Spudding in.

Bridwell Oil Co. No. 13-C Hubbard, 330 ft. N and W lines, Sur. 75. Spudding in.

Duval Oil Corp. No. 13 B.C.C., 330 ft. S and E lines, S½ N½, Sur. 59. Comp.; est. 13 B.P.H.; sd. 2,528-44 ft.

Duval Oil Corp. No. 14 B.C.C., 330 ft. N line, 990 ft. E line, S½ N½, Sur. 59. Comp.; est. 15 B.P.H.; sd. 2,526-40 ft.

Duval Oil Corp. No. 15 B.C.C., 660 ft. N and E lines, N½, S½, Sur. 59. R.U.

Duval Oil Corp. No. 16 B.C.C., 330 ft. N line, 1,650 ft. E line, S½, N½, Sur. 59. R.U.

Frank Gravis No. 3 Flodin, Sur. 78. R.U.

Hamil, Smith & Ogden No. 16 Hubbard, 330 ft. SE cor., SW¼ SW¼ Sur. 77. Sd. 2,669-82 ft.; comp.; no gauge.

Highland Oil Co. No. 17 Hubbard, 990 ft. W line, 1,650 ft. N line, W½ Sur. 73. Sand 2,745-51 ft.; testing.

Highland Oil Co. No. 27 Hubbard, Sur. 73. Comp.; est. 275 B.P.D. on ½-in. choke; sd. 2,711-23 ft.

Highland Oil Co. No. 28 Hubbard, W½, Sur. 72. Drlg. 1,810 ft.

Highland Oil Co. No. 6-D Hahl, sec. 63. Sand 2,576-87 ft.; W.O.C.

Humble O. & R. Co. No. 8-A Hubbard, Sur. 84. T.D. 2,846 ft.; comp. 11 B.P.H.

Humble O. & R. Co. No. 9-A Hubbard, Sur. 84. Drlg. 1,070 ft.

Humble O. & R. Co. No. 7-B Hubbard, Sur. 83. Cg. 2,755 ft.

Humble O. & R. Co. No. 8-B Hubbard, W½, Sur. 83. T.D.; sd. 2,675 ft.; comp.; no gauge.

Humble O. & R. Co. No. 7-C Hubbard, Sur. 72. Drlg. 1,410 ft.

Humble O. & R. Co. No. 34-B Hubbard, Sur. 72. Sd. 2,724-37 ft.; set csg.; W.O.C.

Humble O. & R. Co. No. 10 Ruiz, 2,418.5 ft. S line, 990 ft. W line Sur. 553. Comp.; 7 B.P.H.; sd. 2,805-19 ft.

Kaffie Lbr. Co. No. 1 M. H. Davidson, Sur. 114. Sd. 2,544-55 ft.; W.O.C.

Magnolia Pet. Co. No. 3 Hahl, 1,650 ft. N line, 330 ft. W line, Sur. 67. Rigging up.

Magnolia Pet. Co. No. 17 Hahl, 3,487 ft. W line, 330 ft. S line, Sur. 67. Sand 2,-690-91 ft.; comp.; 62 B.P.D. on ¼-in. ck.

Magnolia Pet. Co. No 22 Hahl, Sur. 67. Sd. 2,597-98 ft.; comp.; 26 B.P.H.; ½-in. choke.

Magnolia Pet. Co. No. 23 Hahl, Sur. 67. Drlg. 611 ft.

Magnolia Pet. Co. No. 25 Hahl, Sur. 67. Skidding on.

Montour Prod Co. No. 7 Hubbard, 1,650 ft. E line, 330 ft. N line, S½ NE¼, Sur. 75. T.D. 2,644 ft.; swbng.

Hiram Reed and J. T. Stover No. 1 C. W. Duke, 330 ft. N and E lines, SE¼ SE¼ Sur. 64. Drlg. 1,783 ft.

Reynosa Oil Co. No. 2-A Davidson, NE¼, Sur. 114. Sd. 2,570-92 ft.; testing.

Rosan Oil Co. No. 10 Hubbard 990 ft. S line, 1,650 ft. W line, Sur. 84. Cg. 2,-621 ft.

Russ Pet. Co. No. 7-D Hahl, 330 ft. E line, 990 ft. S line, NE¼ Sur. 63. Testing 2,553-67 ft.

Shell Pet. Corp. No. 1 Mendosa, 330 ft. S and W lines, Sur. 68. Set csg. 2,803 ft.; W.O.C.

Sun Oil Co. No. 2 Hubbard, Sur. 84. Set csg. 2,820 ft.; W.O.C.

Texas Co. No. 12 B.C.C., 990 ft. E line, 330 ft. S line, N½ sec. 59. Drlg. 562 ft.

Texas Co. No. 20 Wendt, 330 ft. N line, 2,080 ft. W line, Sur. 68. Swbng.

Texas Co. No. 24 Wendt, Sur. 68. Comp.; 15 B.P.H.; T.D. 2,774 ft.

Texas Co. No. 25 Wendt, Sur. 68. Sd. 2,-713-44 ft.; testing.

Texas Co. No. 26 Wendt, Sur. 68. Cg. 2,-623 ft.

Valley Osage Oil Co. No. 2 Hubbard, 990 ft. W line, 330 ft. N line, Sur. 75. Comp.; 16 B.P.H.; sd. 2,595-2,613 ft.

Valley Osage Oil Co. No. 8 Hubbard, 330 ft. W line, 990 ft. N line, Sur. 75. Sd. 2,562-66 ft.; swbng.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 1 D.C.R.C., 2,310 ft. W line, 330 ft. N line, Sur. 95. Sd. 1,954-58 ft.; comp.; 150 B.P.D.; flowing in heads.

Texas Co. No. 14 D.C.R.C., SW¼ Sur. 100. Cg. 1,972 ft.

Seven Sisters—Duval County

Atlantic Oil Prod. Co. No. 1-D Welder, 330 ft. N and E lines, Sur. 113. Comp.; 400 B.P.D. on ⅝-in. choke; T.D. 2,513 ft.

Atlantic Oil Prod. Co. No. 2-D Welder, 660 ft. W No. 1, 330 ft. E line, Sur. 113. Drlg. 2,310 ft.

Atlantic Oil Prod. Co. No. 3-D Welder, 660 ft. SW No. 1, 330 ft. N line, Sur. 113. Drlg. 510 ft.

Atlantic Oil Prod. Co. No. 1-E Welder, Sur. 381. Set csg. 2,439 ft.; W.O.C.

Buchanan & Blanco Oil Co. No. 10 Welder, 330 ft. W line, 415 ft. S line, E½ SW¼ Sur. 385. Flowing in pits; no gauge; T.D. 2,506 ft.

Buchanan & Blanco Oil Co. No. 11 Welder, 330 ft. E line, 915 ft. S line, E½ SW¼ Sur. 385. T.D. 2,211.; drlg. plugs.

Diamond Half Oil Co. No. 2 Serna, 330 ft. N line, 1,516 ft. W line, N½ NE¼ Sur. 384. Sd. 2,211-16 ft.; comp.; 30 B.P.D. on pump.

Humble O. & R. Co. No. 5-B Serna, 990 ft. S line, 330 ft. E line, Sur. 384. Comp.; no gauge; T.D. 2,209 ft.

Humble O. & R. Co. No. 6-B Serna, SE¼, Sur. 384. Cg. 2,197 ft.

Humble O. & R. Co. No. 8-A Serna, SW¼ Sur. 384. T.D. 2,471 ft.; flowing in pits.

Humble O. & R. Co. No. 7 Smith, 330 ft. S and E lines, Sur. 382. R.U.

Humble O. & R. Co. No. 9-A Serna, SW¼, Sur. 384. Loc.

Humble O. & R. Co. No. 2 Wright, SW¼ Sur. 118. T.D.; sd. 2,530 ft.; flowing by heads; swbng.

Mid-Continent Pet. Corp. No. 7 Serna, S½ N½, Sur. 384. Cg. 2,055 ft.

Parr Oil Co. No. 1 Welder, 3,630 ft. E line, 330 ft. N line, Sur. 383. Sand 2,-421-44 ft.; comp.; 20 B.P.H.

Reliance Oil Co. & Kleiner No. 2 Welder. 1,665 ft. E line, 330 ft. S line, S½, Sur. 381. Sd. 2,389-99 ft.; W.O.C.

Reliance Oil Co. No. 1-A Telford, 150 ft. N and W lines, NE 40-ac. tr., NW¼, Sur. 385. Spudding in.

Santa Clara Oil Co. (Atkins & O'Neil) No. 1-B Welder, 330 ft. N and W of SE cor. Sur. 383. Drlg. 1,912 ft.

Santa Clara Oil Co. (Atkins & O'Neil) No. 16 Welder, 330 ft. S and W lines. NE¼, Sur. 385. Completing.

Santa Clara Oil Co. and H. H. Henderson No. 9-C Welder, 2,970 ft. E line, 1,650 ft. S line, Sur. 381. Comp.; no gauge; sd. 2,395-2,411 ft.

Santa Clara Oil Co. and H. H. Henderson No. 10-C Welder, 330 ft. N and E lines, SW¼, Sur. 381. M.I.M.

Shell Pet Corp. No. 2-B Welder, 330 ft. W line, 990 ft. W line, E½ SE¼ Sur. 385. Top sd. 2,635 ft.; T.D. 2,655 ft.; tested S.W.

Shell Pet. Corp. No. 5 Welder, 330 ft. S and W lines, Sur. 385. Drlg. 521 ft.

Westheimer & Daube No. 5 Z. Campos, 1,-650 ft. S line, 330 ft. W line, Sur. 224. Comp.; 27 B.P.H. on ¾-in. choke; T.D. 2,222 ft.

Pearsall—Frio County

Amerada Pet. Corp. No. 1 Correy & McWilliams, 660 ft. N line, 721 ft. W line, Tr. 17, Manuel Tijerina Sur. No. 300. Drlg. 5,350 ft.

Amerada Pet. Corp. No. 1 Correy & McWilliams, 1,980 ft. S line, 746 ft. W line, Tr. 3, Jose Arocha Sur. No. 299. Drlg. 4,577 ft.

Amerada Pet. Corp. No. 1 Correy & McWilliams, 660 ft. S line, 728 ft. E line, Tr. 6, Jose Arocha Sur. No. 298. Drlg. 1,836 ft.

Amerada Pet. Corp. No. 7 Halff & Oppenheimer, 1,320 ft. W line, 330 ft. S line, J. H. Gibson Sur. No. 16. R.U.

Amerada Pet. Corp. No. 1 Kothman, 500 ft. N and W lines, B. L. Crouch Sur. No. 90/6. Drlg. 4,328 ft.

T. Davis No. 1 Halff & Oppenheimer, 329-ac. tract, J. D. Clare Sur. 366½. Sand 4,022-33 ft.; flowed oil and S.W.; T.D. 4,400 ft.; R.U. to deepen.

Gillette—Goliad County

Jane Oil Co. No. 1 Lackey & Welder, 590 ft. SW No. 1 Gillette, J. Gomez Sur. T.D. 3,690 ft.; set csg.; W.O.C.

Magnolia Pet. Co. No. 1 Porter, 512 ft. NE line, 330 ft. SE line, 142-ac. tract, Myers Sur. No. 24. Drlg. 3,760 ft.

Zobrowiski-Guadalupe County

W. J. Walton No. 4 Zobrowiski, J. D. Clements Sur. Set csg. 900 ft.; comp. as gasser.

W. J. Walton No. 5 Zobrowiski, 1,000 ft. SE No. 2, Clements Sur. M.I.M.

Clark—Guadalupe County

Eickenroht & Gallagher No. 1 Johns, 130 ft. E line, 450 ft. N line, 340-ac. tr., DeWitt Sur. 13. Drlg. 1,813 ft.

Ramona Oil Co. No. 1 Katie Say, 150 ft. W line, Davis Sur., 150 ft. S line lease. Drlg. 1,721 ft.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande L. & I. Co., 4,000 ft. SE of No. 1 Farm tr. 2,309, Blk. 59. T.D. 7,598 ft.; reworking.

Union Sulphur Co. No. 8 American Rio Grande L. & I. Co., 660 ft. N & E lines. Tr. 2,120, Blk. 57. Cg. 7,362 ft.

Union Sulphur Co. No. 9 American Rio Grande L. & I. Co., Farm Tr. 2,275, Blk. 59. M.I.M.

Samfordyce—Hidalgo County

J. H. Anderson No. 2 Guerra, Tr. 254, Porc. 40, Perf. csg. 2,742.5-48 ft.; washing in.

J. T. Barlow No. 1 Marta Flores de Chapa, 330 ft. W line, 692 ft. S line, Tr. 250, Porc. 39. Cg. 2,706 ft.

Dean Bros. No. 1 Lula George, 150 ft. S line, 330 ft. W line, 10-ac. tract, Tract 13, Porc. 40. Set sur. csg. 200 ft.; W.O.C.

Ralph E. Fair No. 1-B Seabury, Tr. 256, Porc. 38. Comp.; 65 B.P.D. on 5/32-in. choke; sd. 2,759-97 ft.

Frank Powell No. 1 George, Tr. 13, Porc. 41. Drlg. 1,581 ft.

Weekly Oil Co. No. 1 F. B. Guerra, 330 ft. E line, 150 ft. S line, 9-ac. tract, Tr. 13, Porc. 41. Comp.; gasser; sd. 2,-734-50 ft.

San Diego—Jim Wells County

Houston Oil Co. No. 1 Hawkins & Wallace, 990 ft. S and E lines, Blk. 11. Drlg. 5,511 ft.

Lucas—Live Oak County

Houston Oil Co. No. 33 Cartwright, 1,172 ft. N of No. 21, R. R. Botallio grant. Wild well; extinguished; killing.

Calliham—McMullen County

Agarita Oil Co. No. 2-C Lark, 310 ft. S No. 1, 155 ft. W line, Blk. 56, Scrugham Sur. Cg. 877 ft.

Chas. Hall No. 3 Claunch, 400 ft. SE No. 1 Hely Sur. T.D. 947 ft.; bailing.

Luray Oil Co. No. 9 Glass, 160 ft. S Frio River, 520 ft. E line, Blk. 14, Hely Sur. T.D. 720 ft.; fishing.

Jacob—McMullen County

Lomz Oil Co. No. 105-A Jacob, 220 ft. E line tract, 660 ft. N No. 1-F Jacob. Set csg. 955 ft.; W.O.C.

Aqua Dulce—Nueces County

United Prod. Co. No. 1-A Rivers, 1,400 ft. E line, 2,600 ft. N line, Chapman Porc. Comp.; gasser; T.D. 4,765 ft.

Baldwin—Nueces County

Magnolia Pet. Co. No. 10 Baldwin, 466 ft. N and W line, tract, A. F. Martin Sur. No. 50. Cg. 3,552 ft.

Saxet Heights—Nueces County

Aaron Cohen No. 1 fee, 14/3-ac. tr. Drlg. 621 ft.

S. H. Bartlett No. 1 Harry Bartlett, 120 ft. W line, 200 ft. N line, 1.75-ac. tr., Villareal Sur. Drlg. 513 ft.

Conroe Drlg. Co. No. 1 Hatch, 330 ft. N and E lines, Blk. C, McBride Porc. Comp.; 200 B.P.D.; ¼-in. choke; T.D. 4,103 ft.

Conroe Drlg. Co. No. 1 John Dunn, 330 ft. S line, midway E and W lines, tr., Villareal Sur. Spudded in.

Conroe Drlg. Co. No. 3 Robinson, 330 ft. S and E lines, Blk. E, McBride Part. Reaming 4,090 ft.

Culton & Republic Nat. Gas Co. No. 1-C Baldwin, 330 ft. N and W lines, Blk. 13. Cg. 4,727 ft.

J. K. Culton No. 2 Savage, 150 ft. N and W lines, 4-ac. tr. Spudded in.

Erin Oil Co. and Lee Bros. No. 1 Nut Club, 1.5-ac. tr., Lots 1, 2 and 8, Blk. I, Ellendale Gardens Nos. 2 and 3. Sd. 4,076-85 ft.; testing.

Erin Oil Co. and J. H. Coker, No. 1 Powell, Blk. 2, Ellendale Gardens No. 3. M.I.M.

Tom Graham No. 1 City of Corpus Christi C 5-ac. tr., Villareal Sur. Drlg. 400 ft.

Tom Graham No. 1 Whelan, 330 ft. N and E lines, 40-ac. tract, Villareal Sur. Drlg. 4,626 ft.

D. H. Hawn No. 1 Skipper, cen. 9-ac. tr., N of No. 1 Sheiy. Drlg. 3,370 ft.

Ray Johnson et al No. 1 Pearson, 2-ac. tr., Ellendale Gardens No. 2. R.U.

Marine Oil Co. No. 1 Kaler, 250 ft. N line, 150 ft. W line, 13.05-ac. tract, Villareal Sur. Set sur. csg.; W.O.C.

Marine Oil Co. No. 1 Worley, 14.51-ac. tr., Villareal Sur. T.D. 4,082 ft.; comp.; 5 B.P.H.; ½-in. choke.

Marine Oil Co. No. 2 Worley, 250 ft. N and E lines, 14.92-ac. tr. R.U.

J. P. Nash No. 1 Hatch, 330 ft. E line, 360 ft. N line, tr., Blk. F. Set sur. csg. 500 ft.

Republic Nat. Gas Co. No. 1-B Baldwin, 330 ft. N and W lines, Blk. 19. T.D. 4,-095 ft.; S.D.

Republic Nat. Gas Co. No. 2-B Baldwin, 44-ac. tr., Villareal Sur. Drlg. plugs 4,-089 ft.

Southern Minerals Corp. No. 1 Alkali, 330 ft. S line, 243 ft. E line, Southern Alkali Corp. site. T.D. 4,076 ft.; washing in.

Southern Minerals Corp. No. 2 Chas. Kaler, Villareal Sur. Drlg.

W. F. Stone No. 1 Schleicher, Villareal Sur. Drlg. 3,309 ft.

Taylor Ref. Co. No. 1 Brennan, 150 ft. E line, 330 ft. S line, 14-ac. tr. Drlg. 3,-012 ft.

Taylor Ref. Co. No. 1 Saunders, Villareal Sur. R.U.

J. Parker Thompson No. 1 Powell, Blk. 2, Ellendale Gardens No. 3. M.I.M.

W. A. R. Oil Co. No. 1 John Dunn, 8-ac. tr., N old Shell Road. Spudded in.

Westgate Oil Co. No. 1 Carver, cen. Tract No. 3, Ellendale Gardens. Spudding in.

Westgate Oil Co. No. 1 Flood, cen. Blk. 4, Ellendale Gardens. Drlg.

Westgate Oil Co. No. 1 Geistman, 20-ac. tr., Villareal Sur. Drlg.

Westgate Oil Co. No. 1 Sturm, 142.7 ft. W line, 1,777.8 ft. NW line, 59-ac. tract. Drlg. plugs 4,087 ft.

Saxet—Nueces County

R. B. Bryan No. 1 Clarkwood Townsite, 105 ft. S line, 190 ft. W line tract, Blk. 14, Land Sur. 404. M.I.M.

R. B. Bryan No. 1 Isensee, 354 ft. N line 174 ft. E line tr., Land Sur. 404. Drlg. 4,192 ft.

Capitol Oil Co. No. 1 Clarkwood, 130 ft N and E lines, Blk. 2, Clarkwood Townsite. M.I.M.

Tom Graham No. 2 Flato, Blk. 30, Skidding on.

Houston Oil Co. No. 3 Harrell, 330 ft. S and E line, Blk. 19, Farm Lots 576. Set surface csg.; W.O.C.

Houston Oil Co. No. 9 Rand Morgan, 330 ft. W line, 1,028 ft. N line, sec. 7, Rincon del Oso Sur. Recmtng. 4,867 ft.

Maryland O. & G. Co. No. 1 Winship, cen Lot 3, Drlg. shale 3,506 ft.

Morgan-Texas Oil Co. No. 1 Morgan, 990 ft. E line, 330 ft. N line, Sur. 403. T.D. 4,095 ft.; comp.; no gauge.

Republic Nat. Gas Co. No. 1-B Baldwin, 660 ft. S No. 3, 44-ac. tr. Drlg. 1,257 ft.

W. A. Richardson No. 1 Meredith, Blk. 4. Set csg. 4,403-18 ft.; comp.; 156 B.P.D.

W. A. Richardson No. 2 Meredith, Lot 11, Clarkewood Townsite. Skidding on.

W. A. Richardson No. 1 Smith, C Blk. 4, Clarkwood townsite. R.U.

Shell Pet. Corp. No. 2 Flato, 355 ft. N line 330 ft. E line, Blk. 3. Comp.; est. 12 B.P.H. on ¼-in. choke; sd. 4,846-61 ft.

Southern Mineral Corp. No. 2 Smith, Blk 4, Sheppard Farm Lots. Sand 4,851-57 ft.; swbng.

Texon Royalty Co. No. 1 T. H. Isensee, sec. 404. T.D. 4,403 ft.; W.O.C.

Plymouth—San Patricio County

Magnolia Pet. Co. No. 6 Corpus Christi Land Bank, 350-ft. E line lease, 933 ft. SW No. 5 Hunter Sur. Testing 5,634 ft.

Plymouth Oil Co. No. 34-C Welder, 2,825 ft. N line, 1,116 ft. E line, sec. 49. Sand 5,636-42 ft.; reconditioning.

Plymouth Oil Co. No. 35-C Welder, 467.5 ft. S line, 2,702.9 ft. E line, sec. 71. Comp.; 200 B.P.D.; T.D. 5,642 ft.

Plymouth Oil Co. No. 36-C Welder, 2,590 ft. W line, 1,372 ft. N line, sec. 49. Comp.; 225 B.P.D.; T.D. 5,504 ft.

Plymouth Oil Co. No. 37-C Welder, 3,305 ft. E line, 670 ft. N line, sec. 49. Set csg. 5,502 ft.; cleaning in pits.

Plymouth Oil Co. No. 38-C Welder, 2,978 ft. S line, 2,395 ft. W line, sec. 49. Drlg. sh. 3,015 ft.

Plymouth Oil Co. No. 39-C Welder, 460.4 ft. S line, 1,770 ft. E line, sec. 71. R.U.

Plymouth Oil Co. No. 40-C Welder, 1,472 ft. W line, 3,119 ft. S line, sec. 49. M.I.M.

Sun Oil Co. No. 6 Hunt, 1,320 ft. S of No. 3, 446 ft. E line, sec. 34. Comp.; 6.8 B. P.H. on 5/32-in. choke; T.D. 5,639 ft.

Taft Field—San Patricio County

Humble O. & R. Co. No. 1 Godwin, 330 ft. S and W lines, sec. 23, Taft, Farm Lands, Third Addn. Washing down; T.D. 6,352 ft.; (W.O.).

Shell Pet. Corp. No. 1 Pullin, Blk. 4, sec. Drk.; M.I.M.

Rio Grande City—Starr County

Fech Oil Co. No. 6 Frank Doyno, Blk. 4, Tr. 77-A, Porc. 81. Cg. 1,432 ft.

Samfordyce—Starr County

Phillips Pet. Co. No. 2 Garcia L. & C. Co., W½, Porc. 109. Sd. 2,788-92 ft.; tested dry; running Schlumberger survey.

Sun Oil Co. No. 1 Chapotal, 330 ft. E line, 264 ft. N line, Porter tract, Porcion 99. Sd. 2,814-16 ft.; comp.; 9 B.P.H. on ¼-in. choke.

Carolina-Texas—Webb County

Foster Barnsby No. 5 Webster, Sur. 484. T.D. 3,045 ft.; running csg.

Cole—Webb County

Cole Pet. Co. No. 95 Rosa Benavides, Blk. 7, Sur. 7. Sd. 2,301-66 ft.; reaming.

Lopez—Webb County

Mills Bennett Prod. Co. No. 8 Billings, 330 ft. E line, 2,310 ft. S line, Sur. 113. T.D. 2,167 ft.; comp.; 15 B.P.H.; ½-in. choke.

Mills Bennett Prod. Co. No. 3 Montemayor, 2,310 ft. W line, 2,042 ft. N line, Sur. 114. Drlg. 1,832 ft.

Mills Bennett Prod. Co. No. 3 Valdez, 1,-650 ft. W line, 1,308 ft. N line, Sur. 111. Comp.; 18 B.P.H.; ½-in. choke; T.D. 2,221 ft.

Luling O. & G. Co. No. 1 Peal, 330 ft. S and E lines, Blk 11, Sur. 72. M.I.R.

Montour Prod. Co. No. 4-A Lopez, 330 ft. W line, 1,897 ft. N line, Sur. 111. Comp.; 30 B.P.H.; sd. 2,207-19 ft.

G. G. Mortimer No. 8 M. Lopez, Sur. 112. Sd. 2,232-42 ft.; W.O.C.

G. G. Mortimer No. 1 Paula Vela, 1,225 ft. W line, 2,520 ft. S line, Sur. 114. Drlg. 1,021 ft.

Superior Oil Co. No. 7 Billings, 2,970 ft. E line, 330 ft. N line, Sur. 109. Cg. 2,-247 ft.

O'Hern—Webb County

Hamil & Smith No. 1 Bruni, 330 ft. N and W lines, Sur. 2,213. R.U.

Magnolia Pet. Co. No. 25 Brennan-Benavides, Hale Subd. Sd. 2,732-38 ft.; tested gas.

Magnolia Pet. Co. No. 26 Brennan-Benavides, Blk. 398. Drlg. 200 ft.

Magnolia Pet. Co. No. 5 Servando Benavides, Blk. 392. Sand 2,789-90.5 ft.; comp.; 20 B.P.H.

Magnolia Pet. Co. No. 6-B Benavides, Blk. 425. Drlg. 1,700 ft.

T. S. Reid No. 1 Benavides, Blk. 319. Set csg. 40 ft.; W.O.C.

Texas Co. No. 13 Benavides, Blk. 393. Sd. 2,792-2,806 ft.; W.O.C.

Texla Oil Co. No. 2-B Benavides, Hale Subd., Arispe grant. T.D. 2,845 ft.; comp.; 20 B.P.H.

Escobas—Zapata County

B. W. Roscoe No. 4 Bustamante, Share 33. R.U.

Locke Purnell No. 1 M. Garza heirs, 185 ft. NE line, 196 ft. NW line, Blk. 14, Zorro Bunch. Cg. 500 ft.

Texas Co. No. 86 Whitehead, 25,816 ft. SW line, 11,992 ft. SE line, Cerrito Blanco grant. Drlg. 630 ft.

Haynes—Zapata County

Clover O. & G. Co. No. 10 Haynes, Blk. 7. Set csg. 943 ft.; W.O.C.

Clover O. & G. Co. No. 2 Haynes, 350 ft. NE line, 750 ft. NW line tr., Sur. 8. T.D. 825 ft.; D.&A.

South Texas Oil Co. No. 1 fee, 330 ft. N and W lines, Blk. 21, Sur. 765. Coring 1,747 ft.

WEST TEXAS WILDCATS

Week Ending March 21

Andrews County

Humble O. & R. Co. No. 1 J. M. Spinks, sec. 13, Blk. A-20. Drlg. 724 ft.

Tipplehorn No. 2 King, sec. 11, Blk. A-46. S.D. 4,000 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. Drlg. 1,008 ft.

Concho County

Maverick Oil Co. No. 1 Jim Rice, sec. 18, I.N.R. Ry. Sur. S.D. 2,261 ft.

John W. Westbrook No. 1 Ledbetter, sec. 2, Sur. 1,673. Show gas 2,110 ft.; S.D. 2,112 ft. for csg.; to deepen.

Crane County

Big Bason Pet. Co. No. 1 Cowden. S.D. 2,460 ft.

Clark et al No. 1 A. P. Jordan, sec. 12, Blk. B-22, P.S.L. Sur. Machine.

Moore Bros. No. 1 Barnsley, sec. 43, Blk. 32, P.S.L. Sur. Drlg. 1,960 ft.

Sinclair Prairie Oil Co. et al No. 1 Tubbs, sec. 3, Blk. B-27, S.D. 3,164 ft.; to acidize again.

Crockett County

John I. Moore No. 1 A. C. Hoover, sec. 4, Blk. FF, B.&B. Sur. Drlg. 482 ft.

Ector County

W. Dunning, Jr., No. 1 H. E. Cummins, 2,200 ft. from S and 440 ft. from E, sec. 33, Blk. 45, Twp. 1n, T.&P. Sur. Fishing 205 ft.

W. P. Dunning, Jr. et al No. 1 Mrs. Clarence Scharbauer, sec. 23, Blk. 44, Twp. 1n, T.&P. Sur. T.D. 4,175 ft.; shot 120 qts. 4,145-75 ft.; flowed 150 bbls. day; testing.

Stanolind O. & G. Co. No. 1 J. E. Witcher sec. 24, Blk. 43, Twp. 2s, T.&P. Sur. T.D. 4,230 ft.; P.B. to 4,211 ft.; fishing.

Edwards County

Paul Teas No. 1 J. B. Stewart, sec. 2, Blk. DA, G.C.&S.F. Sur. S.D. 3,035 ft.

Fisher County

Forest Dev. Co. No. 1 A. M. Dry, 640 ft. from S and 2,000 ft. from E, sec. 108, Blk. 2, H.&T.C. Sur. T.D. 2,170 ft.; to plug back to straighten hole.

Gaines County

Landreth Prod. Co. No. 1 Kirk, sec. 22, A-21. T.D. 150 ft.; to move in rotary.

W. T. Walsh et al No. 1 Averitt, sec. 228, Blk. G, W.T.R.R. Sur. Elev. 3,322 ft.; fishing 4,910 ft.; more gas here.

Garza County

M. L. Richards No. 1 Post Estate, sec. 6, Blk. 5, K. Aycock Sur. Drlg. 2,726 ft.

Glasscock County

Fleetborn Oil Corp. No. 1 F. C. Dodson, 330 ft. from S and E. sec. 13, Blk. 34, Twp. 3s. Drlg. 1,357 ft.

Howard County

Southern Oil Co. No. 1 W. P. Edwards, 330 ft. from S and W, sec. 32, Blk. 30, Twp. 1s, T.&P. Sur. Location.

Hudspeth County

Haymon Krupp Oil & Land Co. No. 1 Thaxton, sec. 34, Blk. 74, Twp. 6, T.&P. Sur. S.D. 873 ft.

Jeff Davis County

C. M. Joiner No. 1 Jones & Coffield, sec. 8, Blk. 3, H.&T.C. Sur. T.D. 2,885 ft.; new rotary.

Jones County

Bob Elmore No. 1 Coton, sec. 10, D.D.&A. lands, 3 miles W of Avoca. T.D. 1,728 ft.; set casing.

Fain-McGaha Oil Corp. No. 1 Hayden, E. C. Martinez Sur. 195. Drlg. 78 ft.

Humphrey's No. 1 A. A. McDuff, sec. 1, Blk. 15, T.&P. Sur. Drlg. 2,300 ft.

Parker No. 1 C. L. Brown, sec. 9, Blk. 2, T.&N.O. Sur. Drlg. 680 ft.

Loving County

Mason Oil Co. No. 2 Mrs. M. Kyle, sec. 17, Blk. 55, Twp. 1. Location.

Martin County

Woodley Pet. Co. No. 1 M. S. King, sec. 30, Blk. 35, Twp. 3s, T.&P. Sur. Fishing 2,162 ft.

Menard County

Wilcox O. & G. Co. No. 1 Merchenson, sec. 158, E.L.R.R. Sur., Abst. 1,840, 8 miles S of Menard. Drlg. 940 ft.

Pecos County

Cardinal Oil Co. No. 1-I White & Baker, sec. 1, Blk. 194, G.C.&S.F. Sur. Drlg. 722 ft.

Trans-Pecos Oil Co. No. 1 F. W. Popham, sec. 235, Blk. 11, G.H.&S.A. Sur. Drlg. 305 ft.

Trans-Tex. Oil Co. No. 1 Caldwell, sec. 27, Blk. 40, Twp. 9, T.&P. Sur. S.O. 3,905-4,000 ft.; T.D. 5,280 ft.; P.B. 4,405 ft.; to acidize.

Trans-Pecos Oil Co. No. 1 Gallaher, 330 ft. from N and 2,310 ft. from W, sec. 9, Blk. 51, T.&P. Sur. Rigged up standard tools.

Presidio County

Linderman Bros. Oil Corp. No. 1 J. R. Bledsoe, sec. 15, Blk. 354, G.C.&S.F. Sur., 2½ miles N of Presidio. Drlg. 1,610 ft.

Runnels County

Golden Pet. Co. No. 1 Giesecke, 14,462 ft. from N and 6,790 ft. from E, James Hughes Sur. Drlg. 85 ft.

Schleicher County

Cardinal Oil Co. et al No. 1 J. A. Whitten, sec. 35, Blk. LL, T.C. Ry. Sur. Un-

derreaming 10-in. csg. at 1,190 ft.; T.D. 1,245 ft.

Magnus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, Blk. V-28. Elev. 2,209 ft.; show gas 4,350 ft.

Scurry County

Bristow & Cantrill No. 1 Shannon, Est., sec. 331, Blk. 97, H.&T.C. Sur. Drlg. 2,375 ft.

Coffield & Guthrie No. 1 Wade, 990 ft. from N and 330 ft. from W. sec. 115, Blk. 97, H.&T.C. Sur. T.D. 3,168 ft.; P.B. to 1,900 ft.; C.O.

G. W. Guthrie No. 1 Sorrells, sec. 101, Blk. 97, H.&T.C. Sur. Material.

Upton County

Cordova Union No. 1 fee, 673 ft. S of I.T.I.O. No. 1 Cordova Union, sec. 3, Blk. A.B. T.D. 2,176 ft.; P.B. 2,075 ft.; to acidize.

Greencliff Oil Corp. et al No. 1 J. H. Tippett C NE¼ sec. 58, Blk. Y, T.C Sur. Drlg. 3,300 ft.

I.T.I.O. and Foster No. 1 Cordova Union, 624 ft. W of Ray No. 1 Cordova Union, sec. 3, Blk. AB, A.E. Baxley Sur. T.D. 2,135 ft.; P.B. to 2,077 ft.; testing.

O. F. M. No. 1 King Ranch, sec. 22, Blk. 35, H.&T.C. Sur. Drlg. 2,052 ft.

Ward County

Abell Brothers' No. 1 Lancaster Estate, sec. 61, Blk. 3, H.&G.N. Sur. in Pecos County, 5½ miles down Pecos River from NW cor. of Pecos and E cor. of Reeves County. Drlg. 1,817 ft.

California Co. No. 1 L. Adams, 990 ft. from SW and SE. sec. 39, blk. 34, H.&T.C. Sur. Drlg. 1,800 ft.

C. Cothran No. 1 Greene, sec. 29, Blk. B-29, P.S.L. Sur. T.D. 2,360 ft.; shot; completing.

Lindsay & Bolin No. 1 Thomas, 330 ft. from SW and SE, sec. 31, Blk. 34, H.&T.C. Sur. Drlg. 2,758 ft.

Olsen & Anderson No. 1 Yell, W. F. Stewart Sur., sec. 6, T.D. 2,600 ft.; P.B. to 2,455 ft.; standardizing.

Peck et al No. 1 Reynolds, 220 ft. from NW and 300 ft. from SW of W cor., sec. 13, Blk. 32, H.&T.C. Sur. Fishing 1,170 ft.

Hal C. Peck No. 1 Monroe, 2,310 ft. from SW and SE. sec. 25, Blk. 5, H.&T.C. Sur. Material.

Superior Oil Co. No. 1 J. H. Hughes, 466 ft. from SE and SW, sec. 67, Blk. 34, H.&T.C. Sur. Rigged up rotary.

Winkler County

Gulf Prod. Co. No. 1 Hill, sec. 9, Blk. B-11, S.D. 4,170 ft.; sulfur water.

R. H. Henderson No. 1 McCutchen, sec. 16, Blk. B-3. Derrick.

R. H. Henderson et al No. 1 J. B. Walton, sec. 10, Blk. 26. Drlg. 2,100 ft.

R. H. Henderson et al No. 1 J. B. Walton, sec. 9, Blk. 26. T.D. 3,730 ft.; set casing.

R. H. Henderson No. 1 J. C. Hill, 330 ft. from S and E, sec. 25, Blk. B-3, Loc.

R. H. Henderson No. 2-B Walton, 330 ft. from N and W, sec. 10, Blk. 26, Loc.

Herbert Oil Co. No. 1 I. Hendrick, 2,310 ft. from S and W, sec. 14, Blk. 26. T.D. 2,520 ft.; crooked hole.

Illinois Oil Co. No. 1 Central State Bank of Abilene, sec. 23, Blk. 26, P.S.L. Sur. Drlg. 200 ft.

K-D Oil Co. No. 1 P. Mitchell, sec. 28, Blk. B-10, P.S.L. Sur. Fishing 855 ft.

Magnolia Pet. Co. No. 1 State-Walton, sec. 7, Blk. B-3. Drlg. 3,436 ft.

Fred Hyer No. 1 Evans, sec. 3, Blk. 56. Drlg. 2,412 ft.

Joiner No. 1 Evans, sec. 46, Blk. 73, P.S.L. Sur. Fishing 2,128 ft.

Sun Oil Co. No. 1 Keystone, sec. 3, Blk. 77. Drlg. 3,475 ft.

Superior O. & G. Co. of Tulsa No. 1 M. J. Hill, sec. 18, Blk. B-11, P.S.L. Sur. S.D. 1,120 ft.

Wahlenmaier and Atlantic Oil Prod. Co No. 1-A Walton, sec. 34, Blk. 74. T.D. 2,828 ft.; set casing.

Yoakum County

C. J. Davidson et al No. 1 Bennett, sec. 678, John H. Gibson Sur. Elev. 3,557 ft.; S.D. 5,112 ft.; water exhausted; flowed 80 bbls. oil in 30 min.; fshg.; to deepen.

Texas Panhandle Wildcats

Week Ending March 21

Cottle County

Alma Oil Co. No. 1 Yarbrough, sec. 546, Blk. H, W.&N.W. Sur. Drlg. 3,391 ft.; slight S.O. 2,470-80 ft. and 2,750-55 ft.; S.G. 2,748 ft.

Gray County

Harry Foster No. 1 Johnson, sec. 21, L. L. Erwin Sur. C.O. 2,581 ft.

Iverson et al No. 1 McKinney, sec. 137, Blk. 2, I.&G.N. Sur. Drlg. 3,125 ft.

K. Kinsey No. 1 Stephens, sec. 137, Blk. N and 1,900 ft. from E, sec. 546, Blk. H, B-2, H.&G.N. Sur. C.O. 2,475 ft.

Saulsbury Oil Co. No. 1 Husted, C W½ sec. 116, Blk. B-2, H.&G.N. Sur. Drlg. 2,350 ft.

Upland Oil Co. No. 1 Saunders, sec. 3, Blk. 1, B.S.&F. Sur. S.D. 350 ft.

Hall County

Davis et al No. 1 Knorpp, 330 ft. S and W, sec. 7, Blk. A, A.B.&M. Sur. S.D. 530 ft.

Hartley County

O. V. Beck et al No. 1-A Matador Ranch, sec. 20, Blk. 22, C.S.S. Sur. S.D. 4,600 ft.

Hagy-Harrington & Marsh No. 1 Taylor, C of NW¼ of sec. 2, Blk. 6-T, T.&N.O. Sur. Drlg. 850 ft.

Hutchinson County

Phillips Pet. Co. No. 1 Bryan, sec. 6, Blk. M-21, T.C. Ry. Sur. Location.

Power Pet. Co. No. 1 Hodges, sec. 16, Blk. M-35, T.C. Sur. Drlg. 2,987 ft.; S.G. 2,931-35 ft. and 2,965 ft.

L. L. Travis et al No. 1 Hodges, sec. 14, Blk. X-02, H.O.&B. Sur. Drlg. 360 ft.

Moore County

Shamrock O. & G. Co. No. 1 Ryan-Jones, sec. 190, Blk. 3-T, T.&N.O. Sur. T.D. 3,331 ft.; running csg.; tested 118,000,000 ft. gas daily.

Wheeler County

Allender & Heare No. 1 Harvey, sec. 67, Blk. 13, H.&G.N. Sur. T.D. 2,175 ft.; U.R. csg.; gas at 2,160 ft. and flowed 100 bls. wtr. daily from 2,170-72 ft. and S.O. at 2,175 ft.

Ben G. Barnett No. 1 Stewart, sec. 73, Blk. 13, H.&G.N. Sur. Drlg. 2,131 ft.; est. 10 bbls. oil per hr.

Dumar O. & G. Co. No. 1 Slavik, sec. 108, Blk. 23, H.&G.N. Sur. Drlg. 1,840 ft.

Johnston et al No. 1 Rabo, sec. 105, Blk. 23, H.&G.N. Sur. Spudded and S.D.

Phillips Pet. Co. No. 1 Porter, 1,980 ft. from S and W lines of sec. 35, Blk. A-8, H.&G.N. Sur. Drlg. 1,850 ft.

Smith Bros. No. 1 Woodward, sec. 23, Blk. 24, H.&G.N. Sur. S.D. 2,240 ft.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Mar. 21.—Complete figures compiled by the federal department of trade and commerce at Ottawa show that crude petroleum production in Canada in 1935 totaled 1,439,662 bbls., an increase of 1.2 per cent over the 1934 total of 1,422,869 bbls. The increase was entirely in Ontario, whose output was up from 141,385 to 164,931 bbls. New Brunswick declined from 11,106 to 10,981 bbls., and Alberta from 1,265,940 to 1,263,750 bbls. The 1935 total has still to be increased by returns from the Fort Norman field, which produced 4,438 bbls. in 1934.

The petroleum output for December, 1935, 125,658 bbls., was the highest monthly total since March, 1934, and compared with 116,756 bbls. in November and 117,133 bbls. in December, 1934. New Brunswick production in December was 1,026 bbls. against 869 in November; Ontario was up from 11,935 to 14,514 bbls., and Alberta increased from 103,952 to 110,118 bbls.

Natural Gas Output

The natural gas output from all Canadian fields in 1935 totaled 24,191,612,000 feet compared with 23,162,324,000 feet in 1934. The gain was largely in the concluding three months of the year. The figures do not include Turner Valley gas burned as waste or used to repressure the Bow Island field.

The natural gas output in December was 2,982,607,000 feet against 2,246,830,000 in November and 2,549,257,000 in December, 1934. Imports of mixed (natural and artificial) gas in December amounted to 7,144,000 feet valued at $4,812 against 8,015,000 feet valued at $6,002 in November.

North Turner Valley

In the North Turner Valley field, Royalite Oil Co. No. 27, LSD 4, section 23-20-3w5, has completed a production test which indicated a small wet gas flow, around 1,500,000 feet a day, from 245 feet in the lime at about 5,430 feet. It is deepening below 5,457 feet. Location is a little south of Royalite No. 26, which is the largest producer in the entire field. West of Royalite No. 27, Model Oils No. 3, LSD 1, section 22-20-3w5, is some 506 feet in the lime at 6,240 feet, with a small gas flow and about 10 bbls. a day naphtha. Preparations are being made to give acid treatment.

South Turner Valley

In section 21-18-2w5, South Turner Valley, Union-Freehold Oil Corp. No. 1, LSD 8, has cleared considerable drilling water and shows some increase in gas but not much additional naphtha recovery. It is 665 feet in the lime at 6,260 feet, and may be deepened or given acid treatment. A half mile farther south, in the southeast corner of the section, Highwood-Sarcee Oils No. 2, LSD 1, is below 2,600 feet after changing to rotary tools. Two subdivisions farther west, Highwood Royalties No. 1, LSD 3, has resumed and is deepening below 2,560 feet after getting the cardium sand marker. British American Oil Co. is assisting to complete the test by taking a royalty interest.

Farther north, in section 28-18-2w5, British Dominion Oil & Development Corp. No. 4, LSD 6, has deepened to 6,330 feet and is again taking production while waiting for new drilling line. It is making around 105 bbls. a day on the separator. Farther north and west, Turner Valley Royalties No. 1, LSD 13, same section, is below 4,540 feet and logging satisfactorily. It is considerably west of the proven field, but has encountered all the regular markers.

Kootenay Dome Operations

Roxana Petroleums, Ltd., of Calgary has located its No. 1 test on the Kootenay dome in section 8-24-7w5, and is preparing to start work early in the spring. The structure is northwest of the Turner Valley field, and contiguous to the Stoney Indian Reserve near Morley, where extensive drilling took place a few years ago. The lime contact is expected at 500 feet with potential production inside 1,500 feet.

Aldersyde District

In the High River-Aldersyde area, east of Turner Valley, Arca Development Corp. No. 1, NW section 24-18-1w5, has laid gas line to tap the Canadian Western Natural Gas Co. transmission line 2 miles south of High River. Six miles of 4-inch line are being used. Equipment is being hauled by diesel caterpillar truck.

Four miles north of High River, Globe Royalties No. 1 Oscar Larson farm, LSD 3, section 2-20-29w4, has bunk houses built and equipment on the ground, and is laying gas line. Ranchmen Gas & Oil Co.'s No. 1, LSD 16, section 13-20-29w4, has resumed from 6,693 feet, with fair shows of oil and gas.

Tests in the Foothills

In the Forest Reserve area west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-31-10w5, is running casing preparatory to resuming from 5,422 feet.

On the Jumping Pound structure west of Calgary, Imperial Oil No. 3 Bow River, LSD 6, section 31-24-4w5, is hauling equipment. Location is south of Imperial No. 2 Bow River, drilled some years ago.

On the Watson structure, Mar Jon Oil Co. No. 3, LSD 4, section 3-10-2w5, is in red shale below 4,045 feet with some gas.

Farther south, on the Mill Creek structure, Weymarn Petroleums No. 2, LSD 5, section 7-6-1w5, is below 5,600 feet with continuing oil and gas shows, and no change in formation.

Athabaska Tests Planned

Calgary interests headed by Alfred Hinds, former president of Merland Oil Co., have been granted filing permits by the Alberta government on 20,000 acres in the Athabaska district of northern Alberta. A drilling program is being planned for this summer, to be handled by a company which Mr. Hinds and associates are organizing.

Del Bonita Test

On the Del Bonita structure south of Lethbridge, Terminal Oil Co. No. 1, H. Orcutt farm, NE section 18-1-21w4, is at 5,030 feet and waiting casing perforation equipment to make a production test.

Ontario Drilling

In the Dover field, Kent County, Ontario, E. P. Rowe No. 2 Louis Bruette farm, Lot 5, Front Concession, Raleigh Township, was dry and abandoned 50 feet below the break in the Trenton limestone. It got the Trenton at 2,848 feet and bottom at about 3,300 feet. Rowe No. 1 Bruette, about 600 feet farther north on the same farm, was the first Trenton producer south of the River Thames and indicated a potential southeast extension of the Dover field. No. 1 is pumping around 500 bbls. a month settled production. In the west end of the Dover field, Central Pipe Line Co. No. 4, John Dubenville farm. Dover West Township, is in the Trenton and waiting to clean out for a test. Central No. 5, Eli Jubenville farm, west of No. 4, is shut down.

In Chatham Township, Kent County, Union Gas Co. No. 3, SW Lot 6, Concession 14, is below 800 feet.

In the Eden field, Elgin County, E. P. Rowe No. 4, Ball farm, Lot 26, Concession 8, Bayham Township, has spudded and is below 300 feet. Olga Oil & Gas Co. No. 2, Claude A. Wilson farm, Lot 24, Concession 8, Bayham Township, is drilling into production around 1,320 feet.

PERSONAL

HARRY F. WRIGHT is a native of Iowa but he has lived in Oklahoma, and has been identified with the petroleum industry long enough to be classified as one of the organizers of the American Association of Petroleum Geologists formed in Norman, Okla., in 1916. Mr. Wright was on the staff of the Gypsy Oil Company in 1913 and has been affiliated with other major and independent companies since. He has always been active in Geological Society affairs as well as playing a leading part in the formation of the Petroleum Division of the A.I.M.E. He is now a consulting petroleum engineer and geologist with offices in Tulsa.

A. BEEBY THOMPSON, of London, England, petroleum consultant, is on a business visit in the Trinidad oil fields.

ED H. MOORE, one of the foremost Oklahoma independent oil operators, and MRS. MOORE have gone to South America on a pleasure trip.

W. C. ROBERTSON, chief clerk for Humble Oil & Refining Company in the Pyote district, has been transferred to the Judkins district in Ector County, Texas.

ALEX HOLMES, of Petrolia, Ontario, who left in February for Australia, has arrived at Sydney and started work on a test 35 miles from the city.

B. T. (TOM) ADKERSON, purchasing agent for the Magnolia Petroleum Company, Dallas, Tex., is convalescing from pneumonia at his home in that city.

HARRY A. WILSON, president of the Purchasing Agents Association of Tulsa, and purchasing agent for Superior Oil Corporation, has been visiting his company's properties in several Texas fields.

HENRY R. HARRIMAN was reelected president of the Garland Oil Company at the annual stockholders meeting in Lovell, Wyo. Other officers and directors elected are ERNEST J. GOPPERT, vice president; L. A. BOWMAN, secretary; HELEN M. HARRIMAN, treasurer; and CARL M. SCHAK, director.

M. J. NORRELL, head of public relations for the Magnolia Petroleum Company, has been made chairman of the arrangements committee for a luncheon to be tendered new citizens brought to Dallas, Tex., by the oil industry, at the Hotel Adolphus in Dallas on March 26. EDWARD T. MOORE, former president of the Simms Oil Company, will preside.

R. A. McCORNACK, president, and R. M. McNEILY, vice president of the Refiners Petroleum Company, Chicago, Ill., have returned to that city following a visit of several days in Tulsa.

BONNIE M. HEATH, clerk in the scouting and statistical division of Carter Oil Company, has been transferred from Tulsa to the company's production office at Seminole, Okla. CASEY JENNINGS, who entered Carter service several months ago, succeed him in Tulsa.

MARVIN JONES, who has been assistant to the chief scout of the Magnolia Petroleum Company, Dallas, Tex., has been transferred to Houston to scout in the Gulf Coast district. DALE D. DOUGLASS, formerly scouting out of Houston for the company, has been transferred to Perry, Okla., and PAT DUNCAN has been made assistant to HOWARD BOYD, chief scout of the company at Dallas.

E. W. SAMPSON has been transferred by the Stanolind Oil & Gas Company to its geological department at Midland, Tex.

A. F. NIXON, vice president of the Happy Belting Company, Fort Worth, Tex., has just returned from a business trip to Tulsa.

M. W. PRELLBERG, of James B. Berry Sons Company, Chicago, Ill., was in Tulsa on business for several days this week.

DANIEL JOHNSON, Mount Pleasant, Mich., royalty operator, has returned from Fort Lauderdale, Fla., where he spent much of the winter.

HENRY G. HUNT, Mount Pleasant, Mich., executive secretary of the Oil and Gas Association of Michigan, who represented Michigan operators at a meeting of the Interstate Oil Compact Commission at Oklahoma City, Okla., has returned home.

K. A. (GUS) SCHMIDT, geologist for the Tide Water Oil Company, has been transferred from Palestine, Tex., to Shreveport, La. Mr. Schmidt was one of the principals in locating the Long Lake and Cayuga fields in Anderson County, Texas.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

D. D. Buick, of Buick automobile fame, is president of the Buick Oil Co. in California.

Thomas J. Lockwood of Marietta, well known in the producing end of the oil business since 1864 was accidentally killed at one of his wells near Westfield, Ill. Mr. Lockwood was connected with the South Penn Oil Co. for many years.

All grades of Kansas and Oklahoma and North Louisiana oil are posted at 44 cents per barrel; North Texas oil at 53 cents; Pennsylvania grade at $1.30; Gulf Coast at 67 and 72 cents.

20 YEARS AGO

Lee C. Moore, steel derrick manufacturer, credits Tom Neill, now general manager of the South Penn Oil Co., with the invention and patenting of the steel derrick about 1911. Mr. Moore made a contract with Mr. Neill in that year for the exclusive manufacture of the derricks.

John Sheehan, Sr., veteran pipe line builder, has been experimenting with oxy-acetylene welding and believes it will come to be used to a very considerable extent in pipe line construction.

J. A. Hull has resigned as assistant to the vice president of the Gulf Pipe Line Co., and will move to Tulsa and go into the oil business for himself.

F. H. Hamlin of Chicago, on a visit to Nowata, Okla., claims he and C. H. Hammett now of Tulsa, drilled the first oil well in Nowata County in 1903.

10 YEARS AGO

Alex W. McCoy of California is elected president of the American Association of Petroleum Geologists.

Sinclair Oil & Gas Co. completes the largest oil producer ever found in Oklahoma, its No. 27 Hartley in the Garber, Okla., field, good for 25,867 bbls. in 24 hours from Wilcox sand at 4,216-40 feet. At the current price of 45 gravity crude, $2.76 per barrel, the above day's production was worth $71,392.92.

Texas produces 350,000 bbls. per day. It ranks third with California leading and Oklahoma second.

DARWEN BENEDUM, of the Plymouth Oil Company with headquarters at San Antonio, Tex., was a business visitor to the company's offices at Houston, Tex., the past week.

JOSEPH MOLLOY, prominent independent operator in Ogemaw County oil fields of central Michigan, recently was elected president of the West Branch Chamber of Commerce.

W. J. BROWN, tool pusher for Humble Oil & Refining Company in the Anahuac field (Texas), has been transferred to the West Beaumont district and promoted to district superintendent.

RAY C. WILLIAMSON, production foreman for the Pure Oil Company in the Van field, Van, Tex., has been temporarily transferred to supervise the drilling of the company's deep test near Mount Enterprise.

CARL WALTER is Continental Oil Company's new scout in the Kansas district, succeeding JAKE JULIAN, who has been transferred to the land and lease department. Mr. Walter formerly was located in Denver, Colo.

VIRGIL M. VOORHEES, drilling contractor and producer in Muskegon and central Michigan oil fields for the past eight years, recently has become associated with the Midland Petrol & Gas Company, of Detroit, Mich.

PAUL STOCK, of Cody, a well-known Wyoming operator, has incorporated the Stock Oil Company for $500,000. Other incorporators are L. B. HANDCOCK, of San Jose, Calif., and P. N. FORTIN, of Billings, Mont.

ART NIXON, vice president of the Happy Belting Company, Fort Worth, Tex., has just returned from Tulsa where he has been spending the past few weeks on business. Mr. Nixon was formerly located at the company's headquarters in that city.

PARAGRAPHS

C. R. VINTON, division superintendent of the Pure Oil Company in central Michigan, is recovering at his home in Saginaw, Mich., after a serious operation at the University of Michigan hospital, Ann Arbor.

H. B. HOLLISTER, of Detroit, Mich., construction engineer of the White Star division, Socony-Vacuum Oil Company, paid his first spring visit to the western Michigan marine terminal at Muskegon recently.

HOWARD D. ATHA, Mount Pleasant, Mich., president of the Oil and Gas Association of Michigan, has been named a member of the legislative committee of the Independent Petroleum Association of America for 1936 by CHARLES F. ROESER, president.

HAL WAGNER, advertising manager of the Deep Rock Oil Corporation, has been invited to speak before the Omaha Advertising Club on April 21, on the subject, "Making Your Budget Do Double Duty." Mr. Wagner became first known to the advertising profession several years ago, when he toured the nation in a series of addresses as the "Flying Reporter."

NATE EISENBERGER and WALTER BOYLE, geologists with the Phillips Petroleum Company in San Antonio, Tex., are looking over some of the Kansas fields this week.

GEORGE T. HANSEN, president of the Utah Southern Oil Company, of Salt Lake City, Utah, spent several days in the Garland field in Wyoming where his company has holdings.

A. W. G. BLEECK and CAPT. DEREK FITZGERALD have been appointed directors of the British Burmah Petroleum Company, Ltd., and R. H. TRENCH has resigned from the board.

ADOLPH DOVRE, geologist with the Tide Water Oil Company in San Antonio, Tex., will resign that position April 1 to enter the field of independent consulting work. He will maintain an office in the Milam Building, in San Antonio.

BEN H. KING, past president of the Samfordyce Producers Association, was reelected head of the newly formed Hidalgo County Producers Association, expanded to include operators in other sections of the Lower Rio Grande Valley county..

HARVEL E. WHITE, Wichita, Kans., manager of the Kansas Well Log Bureau of the Kansas Geological Society, was in Tulsa the past week, and took time out from sessions of the American Association of Petroleum Geologists to attend to business.

ROY R. BUSH and EARL P. MARTIN have joined the sales staff of Pittsburgh Equitable Meter Company and its subsidiary, Merco Nordstrom Valve Company, and will work out of the Tulsa office. Mr. Bush formerly was with the Texas Pipe Line Company and other organizations, and Mr. Martin has been connected with Montana Power Gas Company and other firms.

TOM B. ROMINE, geologist for the Sinclair Prairie Oil Company, has been transferred from Corpus Christi to the Texas division offices at Fort Worth.

C. W. TEATER, of Saginaw, Mich., independent operator who opened Michigan's largest oil field in Porter Township, Midland County, writes from Shanghai, China, that he and MRS. TEATER expect to be home next month.

W. L. MUNSEY, assistant general manager of the southern division of the Standard Oil Company of California, completed his thirtieth year of service with the company recently and was tendered a formal dinner in Los Angeles, which was attended by G. E. KENNEDY, a director of the company who traveled from San Francisco for the occasion. Mr. Munsey was presented with a diamond pin in recognition of his long service.

FLOYD S. BRYANT has been made manager of the exploration division of the Standard Oil Company of California's producing division, created to coordinate activities of the geological and land and leasing departments. Mr. Bryant was graduated from the University of Nevada and Oxford University in England. He received a law degree from Oxford and later the degree of doctor of jurisprudence from Leland Stanford University. Mr. Bryant served on the Belgian Relief Commission and the American Ambulance Service until the United States entered the war, when he became a lieutenant of artillery, serving two and a half years.

"As Work May Merit"

"With an increase in compensation as the character of your work may merit." These words constitute the only thing in the way of an employment contract ever held by Amos K. Gordon, vice president and treasurer of the Standard Oil Company of Louisiana, who will retire April 1, after 44 years' continuous service with the Standard organization. They were in a letter from the late Charles W. Archbold (brother of John D. Archbold), who as general manager of the old Camden works of the Standard Oil Company, in Parkersburg, W. Va., gave young Gordon his first job at $20 a month.

AMOS K. GORDON

In April, 1902, during the first Spindletop boom, Mr. Gordon was transferred to Beaumont, Tex., to become purchasing agent for the George A. Burt refinery, now owned by the Magnolia Petroleum Company. After 10 years in Parkersburg and 7 in Beaumont, Mr. Gordon went to Baton Rouge as senior vice president, chief financial officer and ranking member of the board of the Standard Oil Company of Louisiana.

The parent company, Standard Oil Company (New Jersey), was 66 years old last January. Thus Mr. Gordon's service covers two-thirds of its entire existence. He is the last of the original group of executives and directors who founded the Standard of Louisiana in 1909 under the leadership of Col. F. W. Weller. In 1929 he had an active part in the rebuilding and modernization of the great Baton Rouge refinery. Mr. and Mrs. Gordon, with their four sons, will continue to reside in Baton Rouge, where Mr. Gordon has been much interested in civic and welfare work.

FOREST DORN, president of the Forest Oil Corporation, Bradford, Pa., and MRS. DORN are visiting in Miami, Fla.

J. C. DALLAS, president of Roxana Petroleums, Ltd., of Calgary, Alberta, left recently on a business trip to Vancouver, British Columbia.

CHRISTOPHER DALLEY, director of the British Controlled Oilfields, has returned to London, England, from an inspection of the company's properties in Venezuela and Trinidad.

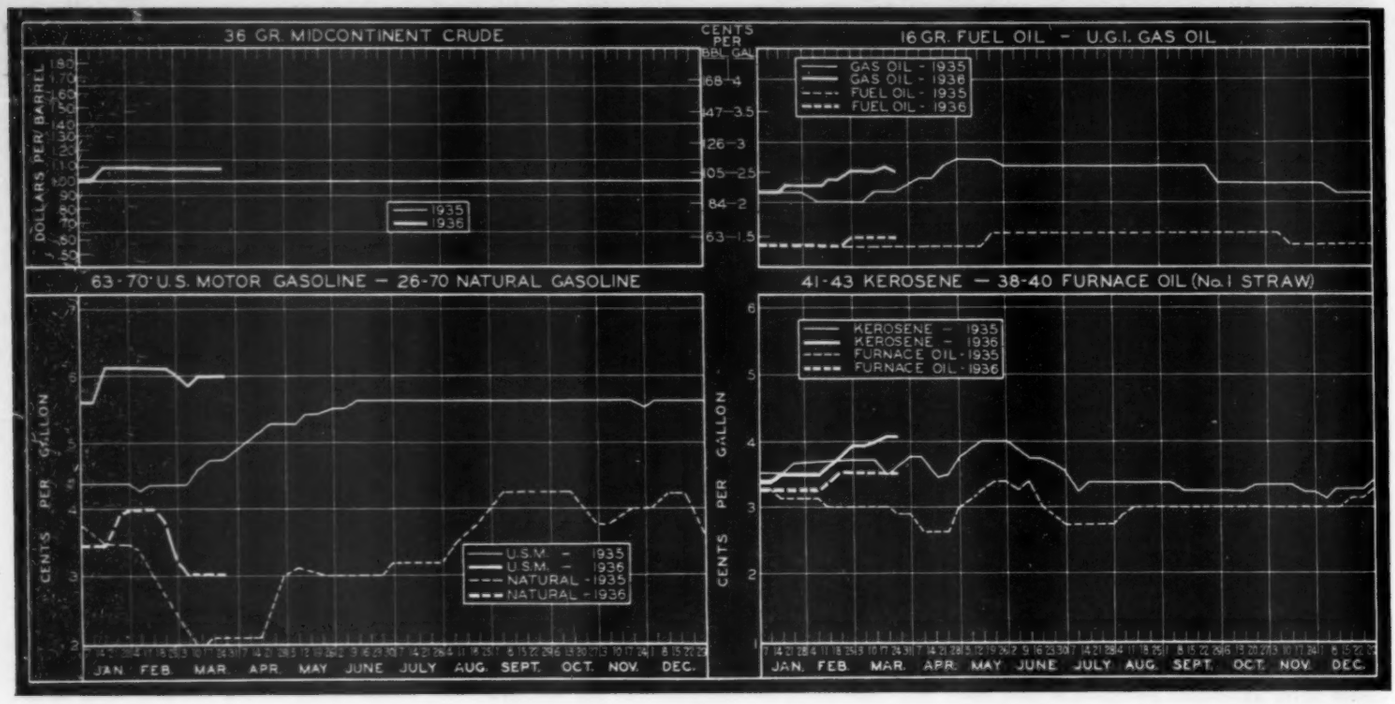
E. W. KOLB, associated with A. W. DINGMAN in the pioneer Turner Valley development, has been named director and secretary-treasurer of Roxana Petroleums, Ltd., of Calgary, Alberta.

E. H. CUNNINGHAM CRAIG, B.A., petroleum geologist, has returned to London, England, from a visit to Trinidad in connection with the development planned by Scottish Trinidad Oilfields, Ltd.

J. A. WARREN, secretary and treasurer of the Kinney-Coastal Oil Company, has returned to Denver, Colo., headquarters after overseeing the completion of the company's No. 3 Government, in the Garland field in Wyoming.

FRED MANNING, president of Manning & Martin, Inc., drilling contractors, has returned to Denver, Colo., headquarters from an inspection of Gulf Coast fields, and is leaving to look over his company's operations in Wyoming and Montana.

L. C. UREN, head of the petroleum engineering department at the University of California, was in Texas for a week recently, speaking at a joint meeting of the Texas Chapters of A.I.M.E. at the University of Texas, Austin, and visiting the petroleum engineering school at Texas A. and M. College at College Station.


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
CENTS PER BBL. GAL.
1935
1936
16 GR. FUEL OIL - U.G.I. GAS OIL
GAS OIL - 1935
GAS OIL - 1936
FUEL OIL - 1935
FUEL OIL - 1936
63-70 U.S. MOTOR GASOLINE — 26-70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. - 1935
U.S.M. - 1936
NATURAL - 1935
NATURAL - 1936
41-43 KEROSENE — 38-40 FURNACE OIL (No. 1 STRAW)
KEROSENE - 1935
KEROSENE - 1936
FURNACE OIL - 1935
FURNACE OIL - 1936
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

Gasoline Is Steadier in Group 3, But Floods Cause a Little Nervousness

By T. F. SMILEY

The gasoline market in the Group 3 territory revealed a firmer undertone this week, although floods in eastern areas and prospects of somewhat similar conditions later in the Mississippi Valley caused a little nervous twitching in the trade. Overheavy stocks in certain districts still remain an unfavorable factor, but available information indicates that in the Mid-Continent there are no excess inventories which constitute a market threat, and there is a growing feeling that as the spring demand mounts, these burdensome stocks in other districts will be absorbed, making it possible to close the season of high consumption with low inventories everywhere.

Watching Developments Closely

Reports indicate that nonintegrated refineries in the Mid-Continent have no distress stocks and that both major and independent refiners are watching developments closely, with a view of keeping production balanced with demand as nearly as possible. The situation has been complicated for Oklahoma refiners by the galloping demand for kerosene and tractor fuel, following closely upon a similar demand for heating oils throughout the recent protracted cold period. To meet the appeals for these products refiners were compelled to add to their stocks of unneeded gasoline. Nevertheless, there has been a gratifying effort to keep runs to stills as low as conditions permit. Informed observers express the opinion that additions to present inventories in the Mid-Continent before the spring pickup will be unimportant.

Some northern areas in Group 3's consuming territory which were expected to suffer heavily from floods have come off lightly thus far although immense masses of snow have been melted. The explanation is that snow covered the ground thickly before severe cold arrived. The snow thus served as a protective blanket, protecting the ground from freezing. So instead of creating freshets, the water from the melting snow is being absorbed by the soft earth.

Refined Oil Market Barometer

Floods have tended to dislocate markets in some areas, but the general outlook is regarded as favorable. Call for aviation gasoline and lubricants has been stimulated by the heavier demands imposed on air service, but tankcar and truck deliveries of refined products have been disturbed. Tight market for kerosene and tractor fuels in the Middle West continues.

MID-CONTINENT. Gasoline steadier. Kerosene, tractor fuels and wax vigorous.

EAST COAST. Gasoline firmer. Gas oil up. Industrial fuels slackening.

GULF COAST. Gasoline and kerosene steady.

PENNSYLVANIA. Bright and cylinder stocks, kerosene, fuel oil and wax strong. Neutrals weak.

CALIFORNIA. Gasoline soft. Fuel oil slightly firmer. Natural off. Prices unchanged.

CHICAGO. Tankcar and retail gasoline markets firmer. Fuel oil steady.

Announcement by the Standard Oil Co. (Indiana) that it has added a tractor fuel to its list of refined products is significant of the growing demand for this type of material and of the widening practice among refiners of manufacturing a fuel designed especially for tractor use. Some Oklahoma refiners for more than a year have been making several grades of tractor fuel, whose specifications were formulated with a view of making them particularly suited to the needs of the modern tractor engine. The original farm tractors, for plowing and other uses, were designed to operate on furnace oil or kerosene, with gasoline as a primer only. Many of these are still in use. These early tractors had two carburetors, one for kerosene and one for gasoline. The later models have only one carburetor, but they are provided with a combination hot-and-cold manifold and a heat-control lever which makes it possible to use gasoline, furnace oil, or any grade of fuel lying between these. There is an increasing trend toward use of gasoline in tractors, though the heavier oils probably will continue to find wide sale because of their lower cost. The special tractor fuels, with lower distillation curve than furnace oil, seem likely to supplant kerosene and furnace oil for operating tractors on the farm.

Demand Still Strong

There was no abatement this week in the rising demand for both the tractor distillates and kerosene. Spot orders for tractor fuel are coming in, and prospects for a tight market continue.

Demand for natural gasoline was fair, with a mild upturn in jobber buying. Decrease in the number of unsold cars on tracks was pointed to as a favorable sign. Some natural for which no demand was found in the northern market was reported to be going to the Gulf, for shipment later in export or coastwise trade. Although this is the annual dull period for the naturals, belief was expressed that enough northern demand would develop to take care of necessary production.

Bright stocks and neutrals were steady, with movement up to expectations and no reports of price cutting to get business. Wax was manifesting increasing strength, with stocks so well bought up that little was available in the open market. Furnace oils and the heavier fuels were holding their ground at unchanged prices.

Abnormal Demand for Aviation Fuel Caused by Floods in Eastern States

NEW YORK, Mar. 23.—Flood developments dominated the activities of the marketing companies on the Atlantic Seaboard during the week. The gasoline situation was complicated by an abnormal demand for aviation gasoline as air transport agencies were called upon to double their passenger, express and freight services during the emergency; by interference with tankcar and tank truck deliveries from refineries to bulk and retail stations in numerous localities, and by damage to a number of bulk distributing and storage plants in the flooded areas. Aside from the serious conditions which have prevailed in western Pennsylvania, much trouble was experienced in the Atlantic Seaboard states from Maryland to Maine, with the most acute situation existing at Hartford, Conn., and other points on the Connecticut River. Fortunately, the important oil refineries in the East are mostly on the Atlantic Coast and beyond danger from floods.

Damage to oil company property from the floods will undoubtedly prove to be substantial, but not serious. The marketing companies have been hard put to meet the emergency demand for petroleum products, particularly aviation gasoline and lubricating oils, and kerosene and candles for lighting in areas where electric light facilities failed. The suppliers of aviation gasoline and lubricating oil report they have been able to meet all demands, although taxed to the limit, especially in the air transport centers of New York, Baltimore and Cleveland. Airports at Hartford, Conn., Washington, D. C., and several other cities were wholly or partly under water. One of the principal air lines has just resumed service from Newark Airport to Pittsburgh, the regular schedule of 12 round-trips per day being doubled. Not only the regular air lines, but U. S. Army planes and privately owned planes, have been active throughout the East. The consumption of aviation gasoline this week is said to have been at least five times normal.

Price Developments

Prior to the development of flood conditions in the East the gasoline market had exhibited a spotty appearance, and at present marketers are more concerned with straightening out transportation tangles and meeting the emergency conditions which now exist, than with the price outlook. Early in the week the tank-wagon and retail gasoline markets were advanced at certain points in southern New Jersey and on March 19 Socony-Vacuum advanced prices in New England with the exception of western Connecticut and Maine, one-half cent per gallon. The advance in southern Jersey was as high as 2 cents per gallon in some sections. However, it was not met by all marketers and there is some doubt whether the market will hold at the advanced level.

Due to a somewhat unfavorable situation in western New York state, the Socony-Vacuum Oil Co. reduced tankcar prices in Buffalo and Rochester one-quarter cent per gallon. This was attributed to local conditions and was not expected to spread.

Motoring weather is steadily improving, with every indication that the gasoline inventory situation will grow steadily better from now on. Motorists show every indication of taking advantage of the good weather and gasoline marketers report in some sections a bigger demand for gasoline than has ever been known at this time of year. There is a distinctly more optimistic feeling in the trade as a whole regarding the outlook.

In the Gulf Coast the domestic gasoline situation is also improving. Standard of Louisiana on March 10 raised tank-wagon and retail gasoline one-half cent per gallon at New Orleans. The company is now quoting motor fuel in tankcar lots to consumers at 7¼ cents per gallon.

Fuel Oils Mixed

One of the major marketers of fuel oils has advanced the price of 27 plus gas oil one-quarter cent per gallon to 4¾ cents, refinery basis, while at the same time reducing industrial fuel in tankcar lots one-quarter to 4 cents. There products are, of course, governed by different influences. The season for making new gas oil contracts or renewing old contracts is near at hand. Local gas companies are therefore in the market, and the higher price now quoted is in line with the tightening in the market which has been evident for some weeks. The new quotation for gas oil represents an advance of approximately one-half cent per gallon over prices quoted on last year's contracts.

The reduction in industrial fuel, on the other hand, is due mainly to seasonal conditions and brings the price to the same level as that existing a year ago.

Export Markets

Reports of greater activity in foreign refinery construction and the development of foreign crude oil production by American and foreign companies occupied the interest of oil exporters here during the past week. It is this trend toward the restriction of export outlets for American refiners that continues to stalemate the export markets for gasoline on the Gulf Coast, according to one export authority. While there has been no display of weakness in the export market, one factor is reported to have shaded its quotation on 64-66 375 endpoint material by one-eighth of a cent to 5⅝. Nevertheless, most exporters are holding to the 5¾-cent quotation.

A desire abroad to encourage domestic oil refining and to provide more securely for national defense is behind the moves of various governments and the rumors of new refinery projects now heard in London and elsewhere. The larger American oil exporters of former years have met the challenge so far by building refineries abroad and acquiring oil concessions in foreign countries from which they will be able to supply the crude for these new foreign plants. It is true crude is being supplied from American fields and more could be shipped in the future; but partly for patriotic reasons, the American exporters hesitate to sacrifice the American oil refining industry by exporting crude in increasing quantities. Furthermore, it is understood the American government is taking cognizance of the long-term outlook in this respect and is definitely encouraging the acquisition by American companies of foreign concessions, in order that America's reserves may be protected.

Lubes Center of Interest

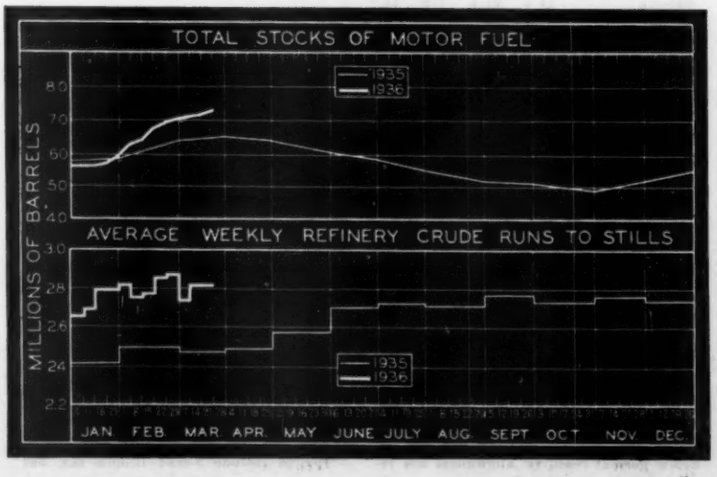
Meanwhile, the principal activity in the American refined petroleum export market centers around Pennsylvania lubricating oils, which continue in brisk demand. The steady upward trend in prices, however, has been halted, at least temporarily. Current quotations for cylinder oils and bright stocks are unchanged at the peak levels of this year so far. Paraffin wax and petrolatums also remain unchanged in price. Export inquiries for the latter are reported as fairly brisk and indications point to a continued firm market for some time.

A. P. I. Weekly Refinery Statistics

Week ending March 21, 1936

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	471,000	18,773,000	6,010,000
Appalachian	94.8	94,000	2,996,000	578,000
Indiana, Illinois, Kentucky	95.9	376,000	11,396,000	2,804,000
Oklahoma, Kansas, Missouri	84.8	263,000	7,838,000	2,500,000
Inland Texas	48.5	90,000	1,914,000	1,409,000
Texas Gulf	96.8	607,000	9,560,000	6,490,000
Louisiana Gulf	96.4	121,000	1,891,000	2,267,000
North Louisiana and Arkansas	90.0	43,000	394,000	389,000
Rocky Mountains	61.9	41,000	1,703,000	693,000
California	92.6	512,000	13,127,000	70,605,000
Total reported	89.6	2,618,000	69,592,000	93,745,000
Estimated unreported	.....	197,000	3,565,000	1,633,000
*Estimated total	.....	2,815,000	73,157,000	95,378,000
*Estimated total previous week	.....	2,815,000	72,722,000	95,862,000
†March 31, 1935	.....	2,472,000	66,290,000	99,380,000

*Bureau of Mines basis currently estimated. †Monthly report, U. S. Bureau of Mines.



Honored by A.A.P.G.

Dr. E. O. Ulrich, chief paleontologist for the U. S. Geological Survey, was made an honorary member of the A.A.P.G. at the annual meeting in Tulsa in recognition of outstanding work in his profession.

George Bovaird, Jr., Bradford, Pa., oil producer, is in Miami, Fla., on a vacation.

RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of March 24, 1936

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank-wagon or 2 cents a gallon off retail prices is permitted for purchases between 4,000 and 10,000 gallons per month, or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. wag.
Chicago	14.5	16.5	4.0	9.5
Decatur, Ill.	16.0	18.0	4.0	9.5
E. St. Louis	15.7	17.7	4.0	9.5
Joliet	16.0	18.0	4.0	9.5
Peoria	16.0	18.0	4.0	9.5
Quincy	15.5	17.5	4.0	9.0
Davenport, Ia.	16.0	(†)	4.0	9.5
Des Moines	15.5	(†)	4.0	9.5
Mason City	16.2	(†)	4.0	10.0
Sioux City	16.0	(†)	4.0	9.5
Duluth, Minn.	16.5	18.5	4.0	10.6
Mankato	16.4	18.4	4.0	10.2
Minneapolis	16.4	18.4	4.0	10.2
LaCrosse, Wis.	17.4	19.4	5.0	10.2
Green Bay	17.7	19.7	5.0	9.6
Milwaukee	16.3	18.3	5.0	10.1
Madison	17.4	19.4	5.0	10.2
Detroit, Mich.	14.6	16.6	4.0	8.6
Grand Rapids	16.4	18.4	4.0	9.0
Saginaw	16.6	18.6	4.0	9.2
Evansville, Ind.	17.7	19.7	5.0	10.3
Indianapolis	17.9	19.9	5.0	10.5
South Bend	18.1	20.1	5.0	8.0
Fargo, N. Dak.	17.4	19.4	4.0	11.2
Huron, S. Dak.	17.9	19.9	5.0	8.5
Sioux Falls	17.4	19.4	5.0	8.0
Kans. City, Mo.*	15.4	17.4	4.0	8.0
Springfield	15.1	17.1	4.0	8.5
St. Louis	15.7	17.7	4.0	9.5
St. Joseph*	15.4	17.4	4.0	8.2
Wichita, Kans.	14.9	16.9	4.0	6.8
Bartlesville, Okla.	17.0	19.0	5.0	8.5

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

†Standard Oil Co. (Indiana) has leased all service stations in Iowa.

Discounts to dealers except in Iowa: 2½ cents on premium and regular and 2½ cents on third grade off service station prices; discounts to dealers in metropolitan Chicago one-half cent larger than rest of Standard of Indiana territory, namely 4 cents and 3 cents on respective grades. Dealers in Iowa sold at posted "Dealer Prices."

Stanolex Fuel Oil in Chicago

Effective February 10, 1936, f.o.b. Chicago tank-wagon prices: Range oil, less than 100 gallons, 8.75 cents; 100-149 gallons, 7.75 cents; 150 gallons and more, 7.25 cents. 1 (36-40 lt. stw. zero), less than 100 gallons, 8.75 cents; 100-149 gallons, 7.75 cents; 150 gallons or more, 7.25 cents; No. 2, (22-26 zero), less than 150 gallons, 7.5 cents; 150 gallons or more, 6.5 cents; No. 4 (12-16 zero), less than 400 gallons, 7.5 cents; 400 gallons or more, 6.5 cents, viscosity of No. 4, 85° and 100° F.; No. 5, less than 400 gallons, 5.75 cents; 400 gallons or more, 4.75 cents.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag.
Denver, Colo.	17.0	19.0	5.0	11.0
Pueblo	19.0	21.0	5.0	13.0
Grand Junction	21.5	23.5	5.0	15.0
Casper, Wyo.	19.5	21.5	5.0	11.5
Cheyenne	19.5	21.5	5.0	13.0
Butte, Mont.	22.0	24.0	6.0	17.5
Billings	20.5	22.5	6.0	16.5
Helena	22.5	24.5	6.0	17.5
Great Falls	21.5	23.5	6.0	17.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Twin Falls, Ida.	23.0	25.0	6.0	18.0
Boise	22.5	24.5	6.0	18.0
Albuquerque, N. M.	21.0	23.0	*6.5	13.0

*Includes one-half cent city tax.

Discount to dealers with or without contract in Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag.
Atlanta, Ga.	20.5	22.5	7.0	*13.5
Augusta	20.0	22.0	7.0	*14.0
Macon	20.0	22.0	7.0	*14.5
Savannah	18.5	20.5	7.0	*13.0
Birm'ham, Ala.	21.0	23.0	8.0	12.0
Mobile	20.0	22.0	8.0	10.0
Montgomery	22.0	24.0	9.0	14.5
Jackson, Miss.	20.0	22.0	7.0	*13.0
Vicksburg	19.5	21.5	7.0	*13.0
Jacksonville, Fla.	18.0	20.0	5.0	12.0
Miami	19.5	21.5	8.0	13.5
Pensacola	21.5	23.5	9.0	12.0
Tampa	18.0	20.0	8.0	12.5
Lexington, Ky.	19.0	21.0	6.0	11.0
Covington	18.5	20.5	6.0	10.5
Louisville	19.0	21.0	6.0	10.0
Paducah	18.0	19.0	6.0	10.0

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile and Birmingham, Ala., each have a city gasoline tax of 1 cent per gallon. Pensacola, Fla., has a city gasoline tax of 1 cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag.
San Francisco	12.5	13.5	4.0	11.5
Los Angeles	12.5	13.5	4.0	10.5
Fresno, Calif.	13.0	14.0	4.0	9.0
Phoenix, Ariz.	16.5	17.5	6.0	‡16.0
Reno, Nev.	15.0	16.0	5.0	13.0
Portland, Ore.	15.0	16.0	6.0	13.5
Seattle, Wash.	15.0	16.0	6.0	13.5
Tacoma	15.0	16.0	6.0	13.5
Spokane	15.0	16.0	6.0	16.5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4 cent per gallon discount is given dealers and customers taking tank-wagon lots except in Phoenix where discount is 1 cent ‡Includes 5-cent state tax.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag.
Atlantic City, N.J.	14.3	17.5	4.0	9.0
Newark	14.3	17.5	4.0	7.5
Annapolis, Md.	15.6	19.1	5.0	10.0
Baltimore	15.0	18.5	5.0	8.5
Cumberland	16.6	20.1	5.0	12.7
Wash'g'n, D. C.	13.0	16.5	3.0	9.0
Danville, Va.	17.5	21.0	6.0	12.9
Norfolk	16.0	19.5	6.0	11.3
Petersburg	16.5	20.0	6.0	11.7
Richmond	16.5	20.0	6.0	11.7
Roanoke	17.5	21.0	6.0	12.9
Charles'n, W.Va.	15.5	19.3	5.0	12.6
Parkersburg	15.1	18.6	5.0	11.2
Wheeling	16.0	19.5	5.0	12.2
Charlotte, N. C.	18.7	22.2	7.0	12.9
Hickory	19.0	22.5	7.0	13.1
Mt. Airy	19.0	22.5	7.0	13.2
Raleigh	18.4	21.9	7.0	12.7
Salisbury	18.8	22.3	7.0	13.0
Charleston, S. C.	17.0	20.5	7.0	11.3
Columbia	18.3	21.8	7.0	12.6
Spartanburg	18.7	22.2	7.0	12.9

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount (if necessary) is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. wag.
Omaha	18.4	20.4	6.0	10.1
McCook	19.1	21.1	6.0	9.8
Norfolk	18.8	20.8	6.0	10.5
North Platte	19.2	21.2	6.0	10.9
Scottsbluff	19.9	21.9	6.0	11.6

Note: Discounts to dealers: where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank-wagon deliveries covered only by Standard Commercial Consumers Contract, effective January 1, 1935.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag.
Philadelphia, Pa.	17.0	19.0	5.0	9.5
Pittsburgh	17.5	17.5	5.0	10.0
Allentown	17.0	19.0	5.0	9.5
Erie	16.5	16.5	5.0	9.0
Scranton	16 75	16 0	5 0	10.0
Altoona	17.5	19.5	5.0	9.5
Dover, Del.	17.0	17.0	5.0	10.0
Wilmington	16.5	16.5	5 0	9.5
Springf'ld, Mass.	14.0	17.5	4.0	7.5
Worcester	13 5	17.0	4 0	7.75
New Haven	13.0	16 5	4 0	7 5
Providence, R. I.	12.0	15 5	3.0	7.25

Note—Tank-wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag.
N. Orleans, La.	18 5	22.0	‡9.0	12.0
Baton Rouge	17.5	21.0	†7.0	11.5
Alexandria	18.5	22.0	††8.0	10.5
Lafayette	19.0	22.5	‡*8.0	12.5
Lake Charles	19.0	22.5	††8.0	10.0
Shreveport	18.0	20.5	†7.0	9.0
Knoxville, Tenn.	21.0	24.5	8.0	14.0
Memphis	19.0	22.5	8.0	9.5
Chattanooga	20.5	24.0	8.0	11.5
Nashville	20.0	23.5	8.0	10.0
Bristol	18.75	21.5	8.0	14.5

*Includes city tax of 1 cent.

†Includes 1-cent parish tax. ‡Includes 3-cent parish tax.

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline: Post deal	Serv. sta.	Inc. tax	Kero. tank wag.
Albany, N. Y.	14 0	17.5	5.0	7.75
*Met. N. Y.:				
Manhtn., Bronx	14.2	19.2	5.0	7.25
Staten Island	14.2	19.2	5.0	7.25
Qu'ns & Br'klyn	14.2	19.2	5.0	7.25
Buffalo	14.5	18.0	5.0	8.25
Rochester	14 5	18 0	5 0	8.25
Syracuse	14.5	18 0	5.0	8.75
Boston, Mass.	13.0	16.5	4.0	7.5
Portland, Me.	14.5	18.0	5.0	7.75
Manch'ter, N. H.	15 0	18.5	5.0	8 0
Burlington, Vt.	17.0	20 5	5.0	8.75
Hartford, Conn.	14.5	18.0	4.0	7.0

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag.
Dallas, Tex.	13.5	17.0	5.0	8.5
Fort Worth	13.5	17.0	5.0	8.5
Houston	14.0	18.0	5.0	8.5
San Antonio	14.0	18.0	5.0	8.5
El Paso	16.0	20.0	5.0	10.0
Muskogee, Okla.	15.0	19.0	5.0	8.0
Okla. City	15.0	19.0	5.0	8.0
Tulsa	15.0	19.0	5.0	8.0
Ft. Smith, Ark.	15 5	19 0	5.0	8.0
Little Rock	18 0	21.5	7.5	9.5
Texarkana	14.5	18.5	5.0	8.5

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag.
Ohio points	17.5	19.5	5.0	*13.5

*Includes state tax of 1 cent.

Canada*

Imperial 3-Star Gasoline
IMPERIAL OIL, LTD.

	Gasoline: Tank wag.	Serv. sta.	Inc. tax	Kero. tank wag
Hamilton, Ont.	21.0	23.5	6.0	17.0
Toronto, Ont.	21.0	23.5	6.0	17.0
Brandon, Man.	30.5	33 5	7.0	23.5
Winnipeg, Man.	29.2	32 2	7.0	20 7
Regina, Sask.	30.5	33 5	7 0	22.0
Saskatoon, Sask.	33.3	36 3	7.0	24.5
Edmonton, Alta.	32.7	35 7	7 0	24 2
Calgary, Alta	30.0	33 0	7.0	21 5
Vancouver, B. C.	26.0	29 0	7.0	24 0
Montreal, Que.	19.5	22 0	6.0	17.5
St. John, N. B.	25.0	29.0	8.0	19.5
Halifax, N. S.	25.0	29.0	8.0	19.5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price, undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal where discounts below station price are one-half cent per gallon less.

Retail Price Changes

Standard Oil Co. (Indiana) March 16 advanced tank-wagon kerosene 1 cent in Grand Rapids.

Continental Oil Co. March 17 reduced tank-wagon and station gasoline 2 cents in Denver.

Standard Oil Co. of Kentucky March 11 reduced tank-wagon gasoline 1 cent and station gasoline 2 cents in Paducah; March 16 reduced tank-wagon and station gasoline 1 cent in Lexington; March 3 reduced tank-wagon kerosene 1 cent in Mobile.

Atlantic Refining Co. March 19 reduced station gasoline 2 cents in Dover and Wilmington; advanced tank-wagon and station gasoline .5 cent in Worcester and Providence; February 21 reduced tank-wagon gasoline 1.5 cents and station gasoline .5 cent in New Haven; and February 23 reduced tank-wagon and station gasoline .75 cent in Scranton.

Socony-Vacuum Oil Co., Inc., March 19 advanced tank-wagon and station gasoline .5 cent in Boston and Manchester.

Standard Oil Co. of Louisiana March 10 advanced tank-wagon and station gasoline .5 cent in New Orleans.

Magnolia Petroleum Co. March 19 reduced tank-wagon and station gasoline 1 cent in Houston and San Antonio; March 20 advanced tank-wagon kerosene .5 cent in Dallas Fort Worth, Houston, San Antonio and Texarkana and 1 cent in Muskogee.

Crude Price Changes

Magnolia Petroleum Co. effective March 16, but not announced until March 20, posted the prevailing prices for oil in the Rodessa, Louisiana, field, but made its schedule for oil below 29 gravity 86 cents; 29 gravity, 88 cents, adding 2 cents for each degree upward to 40 degrees and over at $1.10. Standard of Louisiana schedule starts at 25 gravity, but all companies pay the same for oil 28 degrees and over. Magnolia started buying oil March 16 and on the first day ran 4,138 bbls. and on the second day 7,907 bbls. It is running oil to storage until its pipe line is completed.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of March 24, 1936

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
Below 63 octane	.05	.05¼
63-70 octane	.06	.06¼
60-62 400 grade:		
Below 63 octane	.05	.05¼
63-70 octane	.06	.06¼
64-66 375	.05¼	.05⅝
68-70 360	.05¼	.05½

NORTH TEXAS—

U. S. Motor grades:		
Below 63 octane	.05	.05¼
63-70 octane	.06	.06¼
60-62 400	.05	.05¼
64-66 375	.05¼	.05⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
Below 63 octane		.05⅝
63-70 octane	.06⅝	.06⅝
60-62 400	.05⅝	.06

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
Below 63 octane		.05⅝
63-70 octane	.06⅝	.06⅝

CHICAGO (based on Group 3)—

U. S. Motor grades:		
Below 63 octane	.05	.05⅛
63-70 octane	.06	.06¼
60-62 400	.05	.05¼
64-66 375	.05¼	.05⅝
68-70 360	.05¼	.05½

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.05⅝
60-64.9 octane		.07
65-70 octane		.07¼
64-66 375		.05⅝
68-70 350		.06

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.03⅝	.04⅜
58-60 400	.04½	.05¼

EAST COAST—

U. S. Motor, below 60 octane:		
*New York (Bayonne)		.06⅜
Baltimore		.06⅜
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)		.07
Philadelphia		.07
Boston		.07
Baltimore		.06⅜
Charleston, S. C.		.06⅜
U. S. Motor, 65 and above:		
*New York (Bayonne)		.07¼
Philadelphia		.07¼
Boston		.07¼
Baltimore		.07
Charleston, S. C.		.07

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05¼	.05⅝
60-64.9 octane	.05½	.05⅝
65 octane and higher		.05⅝

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)		.05½
52-54 450 (blending)		.05½
54-56 450 (blending)		.05⅝

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.03	.03⅛
Grade 18-55	.03⅜	.04
Low vapor pressure grade:		
*14 lb. v.p. (max.)	.04¼	.04⅝
*12 lb. v.p. (max.)	.04⅜	.05

*Nominal.

NORTH TEXAS—

Grade 26-70		.03
Grade 18-55	.03⅝	.03⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70		.03⅝

CALIFORNIA—

75-85 375-390	.04¾	.05½

Tractor Fuel

OKLAHOMA (Group 3)—

Deep Rock 40-42 gr., 315-325 l.b.p., 110 flash, 540-550 e.p.	.04½
Mid-Cont. 41-43 gr., 300-350 l.b.p., 110-125 flash, 500-520 e.p.	.04½
Mid-Cont. 46-48 gr., 210-230 l.b.p., 480 max. e.p.	.05

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅛	.04⅝
42-44	.04¾	.04½

NORTH TEXAS—

41-43	.04⅛	.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43		.04¼

ARKANSAS (Ark., N. La., Miss. del.)—

41-43		.04½

PENNSYLVANIA (inland refineries)—

45		.05½
46		.05⅝
47		.05⅝

CHICAGO (based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04¼	.04½

CALIFORNIA (Pac. Coast market)—

38-40 high burning test	.03½	.05

NEW YORK (Bayonne, N. J.)—

*41-43		.05¼

GULF COAST (domestic)—

41-43	.04¼	.04½

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03⅝	.03⅝
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03⅜	.03½
No. 2 dark, 32-36	.03¼	.03⅜
No. 3, 28-32	.03⅛	.03¼
No. 3, 15 and above, 28-32	.02⅝	.02⅝

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅝	.03⅝
No. 1 straw, 38-40	.03½	.03⅝

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36		.03⅝
No. 3, 28-32	.03⅜	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36		.03⅝
No. 3, 28-32	.03⅜	.03½

CHICAGO (based on Group 3)—

No. 1 prime white, 38-40	.03⅝	.03⅝
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03⅜	.03⅝
No. 2 dark, 32-36	.03¼	.03⅜
No. 3, zero to 15, 28-32	.03⅛	.03⅜
No. 3, 15 and above, 28-32	.02⅝	.02½

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¼
*No. 2		.04⅝
*No. 4		.04½

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02½	.02⅝
No. 4, 24-28	.92½	1.00
No. 4, 15 and above, 24-28	.77½	.82½
No. 5	.70	.75
No. 6	.65	.70
Below 18 fuel oil, industrial	.62½	.67½

NORTH TEXAS—

U.G.I. gas oil	.02⅝	.02⅝
No. 4, 24-28	.92½	1.00
No. 5	.70	.75
No. 6	.65	.70
Below 18 fuel oil, industrial	.62½	.67½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U.G.I. gas oil	.02⅝	.03
10-14 fuel oil, industrial	.75	.80

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.60	.65

CHICAGO (based on Group 3)—

U.G.I. gas oil	.02⅝	.02½
No. 4, 24-28	.95	1.00
No. 4, 15 and above, 24-28	.77½	.82½
No. 5, 18-22	.72½	.75
No. 6, 10-15	.63½	.67½

Fuel oils of more than 40 cold test generally 5 to 15 cents per bbl. in these areas.

PENNSYLVANIA (inland refineries)—

36-40	.04½	.04⅝

CALIFORNIA—

Los Angeles:

30-34 gas oil, per bbl.	1.10	1.25
27 plus diesel	1.05	1.20
27 plus diesel (bunkers)	1.15	1.25
12-16 (bunkers at tidewater)	.83	.92
10-16 (cargo lots)	.75	.85
12-17 (tankcars)	.65	.90

San Joaquin Valley:

10-18 (tankcars)	.55	.70

San Francisco:

27 plus diesel, per bbl.		1.25
27 plus diesel (bunkers)		1.35
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03¼	.03⅜
28-30 diesel (bunkers)		1.70
Bunker C (bulk cargoes)		.75
Bunker C (bunkers)		.90

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¾
28-30 diesel (lighterage 6¼ plus per bbl.)		1.65
28-30 diesel (tankers)		.04½
*Bunker C (to ocean-going ships in N. Y. harbor)		1.05
Industrial fuel (tankcars)		.04

*Lighterage charge 5c bbl. additional.

Bright and Steam-Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.20
150-160 D, 0-10		.17
150-160 D, 15-25		.16½
150-160 E, 15-25		.16
100-110 D, 0-10		.15¾
Steam refined:		
630 green (treated)		.10½
600 light green (untreated)		.09
600 dark green (untreated)	.06½	.07½

PENNSYLVANIA—

Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 510; 540-550 flash):

10 pour test	.22	.22½
15 pour test	.21	.21½
20 pour test	.20	.20½
25 pour test	.19	.19½
Steam refined:		
600	.11	.11½
650	.12½	.13
600 Pennsylvania flash	.13½	.14
630 flash	.17½	.18
600 Warren E filtered	.13½	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:

150-3		.10
180-3		.11¼
180-4		.10⅝
200-3		.11⅝
200-4		.11¼
250-3		.13⅝
250-4		.13¼
280-3		.14⅝
280-4		.14⅜
300-3½		.15¼
400-3½		.16
100-2 paraffin oil		.05⅝

15-20 Cold Test:

200-3		.10⅝
200-4		.10¼
240-3		.12⅝
240-4		.12¼
280-3		.13⅝
280-4		.13

GULF COAST—

Pale Oils:

200-3	.07	.07½
300-3	.07½	.08
500-3½	.08½	.09
750-3½	.09	.09½
1,200-3½	.09½	.09⅝
2,000-4	.09⅝	.10

Red Oils:

200-5-6	.07	.07¼
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08½	.09
1,200-5-6	.09	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:

100-2½-3	.06½	.06⅝
200-2½-3	.06⅝	.07
300-3-3½	.07	.07½
400-3-4	.09	.09½
450-3-4	.09⅝	.10
550-3-4	.10	.10¼
600-3-4	.10¼	.10½

Red Oils:

200-4-5	.06½	.06⅝
300-5-6	.06⅝	.07
350-5-6	.07	.07½
400-5-6	.08	.08¼
450-5-6	.08¼	.08½
500-5-6	.08½	.08⅝
600-5-6½	.09	.09½
700-6½ plus	.09½	.10
750-6½ plus	.10	.10¼
900-6½ plus	.10¼	.10½

PENNSYLVANIA—

150 vis. at 70° F., color, 400-405 flash:

Zero pour test	.19	.19½
10 pour test	.18	.18½
15 pour test	.17½	.18
25 pour test	.16½	.17

180 vis. at 70° F., 3 color:

25 pour test	.19½	.20

200 vis. at 70° F., 3 color:

Zero pour test	.23	.23½
10 pour test	.22	.22½
15 pour test	.21½	.22
25 pour test	.20½	.21

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02⅝	.02¾

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0245	.0250
124-126 (a.m.p.) w.c. scale	.0250	.0255

NEW YORK—

Wax in bags fully refined:

123-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0240	.0250
124-126 (a.m.p.) y.s.	.0240	.0245

Petrolatum in barrels, carload lots:

Dark green		.01⅞
Amber	.02⅝	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.05⅝	.05½
60-62 400		.05½
61-63 390		.05⅝
64-66 375		.05⅝

LOS ANGELES—

U. S. Motor grades:

53-55 octane		.04¼
55-5 octane	.04¼	.04½
65-67 octane	.04½	.04⅝
67-69 octane	.04⅝	.05
Above 69 octane	.05	.05¼
58-60 400 endpoint	.05¼	.05⅝

KEROSENE

GULF COAST—

41-43 prime white		.03⅞
41-43 water white		.04
44 water white		.04¼

LOS ANGELES—

41-43 water white	.04¼	.04⅝

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.a.s. in bbls.)—

Cylinder Stocks:

600 Warren E		.20½
600 S.R., unfiltered	.18½	.19
650 S.R., unfiltered	.19	.19½
600 flash S.R.	.19½	.20
630 flash S.R.		.24
Bright Stocks:		
8 color		.26
6½ plus color in dilution		.25½

NEUTRAL OIL

200-3 color	.27½	.28
150-3 color	.23	.23½

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0240	.0250
124-126 y.s.	.0240	.0245

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 9, 1936)

East Texas*	$1.15
Van, Tex.†	1.02
Altus and Tipton, Okla.‡	1.08
Other fields (see gravity table).	

*All companies. †Pure Oil Co. ‡Gypsy Oil Co.

West Texas

Crane, Upton, Howard, Glasscock and Mitchell Counties	$ .80
Winkler County	.85
Lea County, N. Mex.	.85
Pecos County*	.85
Pecos shallow†	.75

*Shell Petroleum Co., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Note—For Humble, Magnolia and Texas Co.'s West Texas and Lea County prices see gravity table. Above prices are those of other buyers.

Rocky Mountain States

(Effective January 9, 1936)

Iles, Colo., light*	$1.06
Iles, Colo., heavy*	1.00
Greybull, Wyo.*	1.28
Torchlight, Wyo.*	1.28
Grass Creek, Wyo., light*†	1.28
Grass Creek, Wyo., heavy*†	.72
Hamilton Dome, Wyo.*	.67
Elk Basin, Wyo., light*†	1.28
Frannie, Wyo., heavy*	.72
Frannie, Wyo., light (Feb. 24, 1936)*	.78
Hogback, N. Mex.*	1.21
Pondera, Mont.* (Jan. 29, 1936)	1.05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1.11
Rock Creek, Wyo.†	1.12
Artesia, N. Mex. (Dec. 1, 1933)†‡	.75
Maljamar, N. Mex. (Sept. 29, 1933)†	.75
Fort Collins and Wellington, Colo.‡ (Jan. 9, 1936)	See Note
Florence, Colo.	.93
Lance Creek, Wyo.	.85
Lost Soldier, Wyo. (Sept. 30, 1933)	.83
Hudson, Wyo. (June 3, 1931)	.65
Sunburst, Mont.	1.25
Cat Creek, Mont.	1.28
Cut Bank, Mont. (May 23, 1934)	1.45

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co.

Note—Fort Collins and Wellington are not posted, price 5 cents under quotation of Salt Creek crude of like gravity (Fort Collins 36°; Wellington 33°). *Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co.

Southwest Texas

(January 9, 1936)

Saxet	$ .90
Mirando	.85
Pettus	1.25
Salt Flat*	.97
Salt Flat‡	.97
Darst Creek*	.97
Darst Creek†	.97
Luling	.90
Lytton Springs	1.00
Duval County	.85

*Humble Oil & Refining Co. †Magnolia Petroleum Co., Gulf Pipe Line Co. and Texas Co. ‡Shell Petroleum Corp. Saxet posted by Humble and Texas; Mirando by Humble and Magnolia; Pettus by Humble; Salt Flat by Humble; Luling and Lytton Springs by Magnolia; Duvall by Texas Co.

Middle Western States

OHIO OIL CO.

Lima (Jan. 10, 1936)	$1.25
Illinois (Jan. 9, 1936)	1.23
Princeton, Ind. (Jan. 9, 1936)	1.23
Midland, Mich. (Jan. 13, 1936)*	1.32
West Branch, Mich. (Nov. 7, 1935)	.96
Muskegon, Mich.	1.00
Ogemaw, Mich.	1.06
Eastern Kentucky:	
Big Sandy River (Jan. 9, 1936)	1.30
Kentucky River (Jan. 9, 1936)	1.38
Western Kentucky (Jan. 9, 1936)	1.23

*Posted by Pure Oil Co., Simrall Pipe Line Co. Ogemaw and West Branch, Mich., by Simrall Pipe Line Co. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Gulf Coast

(January 9, 1936)

Cleveland, Tex.	$1.10
Hardin, Tex.	1.03
Greta, Tex.	.90
Refugio, Tex., heavy	.90
Tomball, Tex.	1.30
LaFitte, La.	1.12
Livingston, Tex.	1.15
Bosco, La.	1.00
Evangeline, La.	1.07
Welsh, La.	.96

Cleveland and Hardin by Magnolia; Greta by Texas Co.; Refugio by Humble; Tomball by Humble and Magnolia; LaFitte by Texas Co.; Bosco by Pure; Evangeline and Welsh by Stanolind Oil & Gas Co.; Livingston by Shell Petroleum Corp.

North Louisiana and Arkansas

Smackover, all grades (Jan. 10, 1936)*	$ .75
Smackover, all grades (Jan. 9, 1936)†	.80
Tullos and Urania (Jan. 10, 1936)	.97
Nevada, Ark. (Jan. 10, 1936)	.65
El Dorado East Field (Jan. 14, 1936)	.75
Converse, Holly, Pleasant Hill and Zwolle (Jan. 10, 1936)*	1.10
Lisbon, Ark. (Jan. 10, 1936)*	1.10
Elm Grove, La. (Jan. 10, 1936)	.80

*Standard Oil Co. of Louisiana, Gulf Refining Co., Louisiana Oil Refining Co., Texas Co. (effective January 14) and Magnolia Petroleum Co. (effective January 16). Urania by H. L. Hunt Co. and Louisiana Oil Refining Co. Nevada by Standard of Louisiana. El Dorado East field by Magnolia Petroleum Co. Phillips Petroleum Co. (effective January 17), posts 75 cents for all grades in Union and Ouachita Counties, Arkansas.

Eastern States

TIDE WATER PIPE CO.

(Effective Jan. 13, 1936)

Bradford, Pa.	$2.45
Allegany, N. Y.	2.45

SOUTH PENN OIL CO.

(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.45
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.17
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.12
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.97
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.42

PENNZOIL CO.

(Effective Jan. 13, 1936)

Pennsylvania Grade Oil in National Transit Lines:	
Group A — Includes Cochran, Franklin, Hamilton and Doolittle districts.	2.43
Group B — Includes Titusville district.	2.41
Group C — Includes Turkey and Tidioute districts.	2.40
Group D — Includes Bear Creek and Porkey districts.	2.39
Group E — Includes Edeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jamesen, Kenerdell, Emlenton, Tiona, Lacey and Kinsua districts.	2.36

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.

(Effective Jan. 13, 1936)

Cabin Creek, W. Va.	$2.12
Bradford Hollow, W. Va.	2.13
Kelly Creek, W. Va.	2.13

Canada

Ontario (Sept. 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (Feb. 3, 1936):†	
Clear naphtha	2.70
Discolored naphtha	2.46
Crude oil, 50 gravity	2.32
Crude oil, 45 to 49.9	2.12
Crude oil, 40 to 44.9	1.56

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$ .82

*F.o.b. ship, based on February transactions and exclusive of production and export taxes and bar dues.

W. Ross Leard, in the petroleum engineering department of the Magnolia Petroleum Co., Dallas, Tex., was married to Miss Ruth C. Davis of that city, formerly of Taft, Tex., on March 15.

Crude Prices by Gravities

Gravity—	Oklahoma, Kansas, and Salt Creek, Wyo.	Central and North Texas	East Central Texas	North Louisiana, Arkansas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Conroe, Texas	West Texas and Lea County, New Mexico	Gulf Coast, Texas and Louisiana	Anahuac and Dickinson, Texas	Iowa and Cameron Meadows, Texas
Below 20	....	....	....	....	....	....	....	....	$ .92	....	$ .82
20-20.9	....	....	....	....	....	....	....	....	.94	....	.84
21-21.9	....	....	....	....	....	....	....	....	.96	....	.86
22-22.9	....	....	....	....	....	....	....	....	.98	....	.88
23-23.9	....	....	....	....	....	....	....	....	1.00	....	.90
24-24.9	....	....	....	....	....	....	....	....	1.02	....	.92
Below 25	$ .86	....	....	$ 78	....	....	....	....	....	....	....
25-25.9	88	....	....	.80	....	....	....	....	1.04	....	.94
26-26.9	.90	....	....	.82	....	....	....	....	1.06	....	.96
27-27.9	.92	....	....	.84	....	....	....	....	1.08	....	.98
28-28.9	.94	....	....	.86	....	....	....	....	1.10	....	1.00
Below 29	.94	$ .84	$ .91	....	....	....	....	$ .75	....	....	....
29-29.9	.96	.86	.93	.88	....	....	....	.76	1.12	....	1.02
30-30.9	.98	.88	.95	.90	....	....	....	.78	1.14	$1.04	1.04
31-31.9	1 00	.90	.97	.92	....	....	....	.80	1.16	1.06	1.06
32-32.9	1.02	.92	.99	.94	....	....	....	.82	1.18	1.08	1.08
33-33.9	1.04	.94	1.01	.96	....	....	....	.84	1.20	1.10	1.10
34-34.9	1.06	.96	1.03	.98	....	....	....	.86	1.22	1.12	1.12
Below 35	....	....	....	....	$ .86	$ .81	....	....	....	....	....
35-35.9	1.08	.98	1.05	1.00	.88	.83	$1.24	.88	1.22	1.14	1.12
36-36.9	1.10	1.00	1.07	1 02	.90	.85	1.26	.90	1.22	1.16	1.12
37-37.9	1.12	1.02	1.09	1 04	.92	.87	1.28	.90	1.22	1.18	1.12
38-38.9	1.14	1.04	1.11	1.06	.94	.89	1.30	.90	1.22	1.20	1.12
39-39.9	1.16	1.06	1.13	1.08	.96	.91	1.32	.90	1.22	1.22	1.12
40 and over	1 18	1.08	1.15	1.10	98	.93	1.34	.90	1.22	1 24	1 12

Magnolia Petroleum Co. in the East Texas field pays 7 cents per bbl. less than above posted prices in that field.

STANDARD OIL CO. OF CALIFORNIA

Crude oil prices at the well effective March 7, 1936

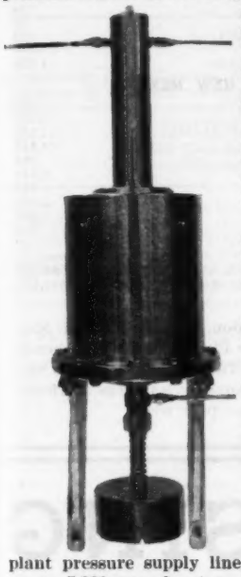
Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canon	Athens-Rosecrans	Dominguez	Playa del Rey Terrace	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills	Buena Vista Hills Midway-Sunset except Lakeview Area	Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills
14-14.9	$ .80	$ .79	$ .74	$ .78	$ .79	$ .80	$ .76	....	....	....	$ .80	$ .76	$ .76	$ .77	$ .78	....	....	$ .65	$ .70	$ .65	$ .70	$ .70	....	....
15-15.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
16-16.9	.80	.79	.74	.78	.79	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
17-17.9	.80	.79	.74	.78	.81	.80	.76	....	....	....	.80	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
18-18.9	.80	.79	.74	.78	.84	.80	.78	....	....	....	.82	.76	.76	.77	.78	....	....	.65	.70	.65	.70	.70	....	....
19-19.9	.82	.79	.74	.82	.87	.84	.81	....	....	....	.85	.76	.78	.77	.78	....	$ .70	.66	.74	.66	.74	.71	$ .70	....
20-20.9	.85	.79	.74	.85	.90	.88	.84	....	....	....	.88	.78	.82	.77	.80	....	.70	.68	.78	.68	.78	.72	.70	....
21-21.9	.88	.79	.74	.89	.93	.92	.88	....	....	....	.91	.80	.85	.77	.84	$ .78	.73	.71	.82	.71	.82	.74	.70	....
22-22.9	.92	.82	.74	.92	.96	.96	.92	....	....	....	.93	.84	.89	.79	.88	.78	.77	.74	.87	.74	.86	.78	.72	....
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$ .84	$ .79	....	.96	.88	.93	.82	.92	.78	.80	.77	.92	.77	.90	.82	.76	....
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	....	.99	.91	.96	.85	.96	.82	.84	.80	.97	.80	.94	.86	.79	....
25-25.9	1.03	.95	.82	1.02	1.05	1.11	1.03	.93	.83	....	1.02	.95	....	.89	.99	.86	.88	.83	1.01	.83	.98	.90	.83	....
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	....	1.05	.98	....	.92	1.03	.90	.91	.86	1.06	.86	1.02	....	....	....
27-27.9	1.10	1.05	.88	1.11	1.12	....	1.10	1.03	.88	....	....	1.02	....	.96	1.06	.95	.95	.88	1.10	.88	1.06	....	....	....
28-28.9	1.14	1.10	.90	1.14	1.16	....	1.14	1.07	.90	....	....	1.06	....	.99	1.10	.99	.99	.91	1.15	.91	1.10	....	....	....
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	....	....	1.09	....	1.03	1.14	1.03	1.02	.94	1.20	.94	1.14	....	....	....
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	....	....	....	1.07	1.17	1.08	1.06	.97	1.25	.97	1.18	....	....	....
31-31.9	....	....	....	....	1.24	Pipe	1.24	1.23	.97	Ship	....	....	....	1.11	1.21	1.12	1.09	.99	1.29	.99	....	....	....	....
32-32.9	....	....	....	....	1.27	Line	1.27	1.27	1.00	....	....	....	....	1.14	1.25	1.16	1.13	1.02	1.34	1.02	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.32	....	$1.28	....	....	....	1.18	1.28	1.20	1.17	1.04	1.38	1.04	....	....	....	$1 19
34-34.9	....	....	....	....	....	....	....	1.37	....	1.32	....	....	....	1.22	1.32	1.25	1.20	....	....	....	....	....	....	1 23
35-35.9	....	....	....	....	....	....	....	1.42	....	1.36	....	....	....	1.25	....	1.29	....	....	....	....	....	....	....	1 27
36-36.9	....	....	....	....	....	....	....	1.46	....	1.39	....	....	....	1.29	....	1.33	....	....	....	....	....	....	....	1 31
37-37.9	....	....	....	....	....	....	....	1.51	....	1.43	....	....	....	1.32	....	1.37	....	....	....	....	....	....	....	1 35
38-38.9	....	....	....	....	....	....	....	1.56	....	....	....	....	....	1.36	....	1.42	....	....	....	....	....	....	....	1 39
39-39.9	....	....	....	....	....	....	....	1.61	....	....	....	....	....	1.40	....	....	....	....	....	....	....	....	....	1.43
40-40.9	....	....	....	....	....	....	....	1.66	....	....	....	....	....	1.43	....	....	....	....	....	....	....	....	....	....

Newhall, McKittrick, Kern River and Round Mountain 70 cents for all grades. Kern Front 70 cents for all grades.

NEW OR IMPROVED EQUIPMENT

Hydraulic Pressure Booster Is Designed for Making Tests

A hydraulic pressure booster, designed especially for testing gauges, castings, connections and pressure vessels in the shop or laboratory has been developed by the Martin-Decker Corp. of Long Beach, Calif. It requires no special pumps or motors to build up pressures, but is designed to operate from the regular source of water or air supply for the plant.



The booster consists of two cylinders, one low-pressure, into which is connected a line from the plant water or air supply system, and the other high-pressure, with a lead out to the gauges or lines to be tested. The booster is mounted on the test bench, or in the most convenient place, with the necessary connections and valves to operate it. By manipulating a valve from the plant pressure supply line, pressures can be built up to 5,000 pounds at a slow and steady rate or as rapidly as desired. It is especially useful in testing gauges and manifolds where small volumes and high pressures are required.

Bulletins, Booklets and Other Literature for the Trade

Besides art work and articles of unusually high merit, the current number of the Lufkin Line, published by Lufkin Foundry & Machine Co., Lufkin, Tex., contains interesting "Typical Lufkin Installations."

A mailing-piece prepared by Bridgeport Brass Co., Bridgeport, Conn., points out the costliness of shutdowns and replacements necessitated by corrosion of sucker-rods and polish-rods and asks consideration of Norris Duronze, designed to eliminate this trouble.

"From Fifth Avenue to Main Street alloy steels have changed the driving habits of America," declares a broadside in colors issued by Republic Steel Corp., Cleveland, Ohio.

"A Rubber Plantation in New Jersey" is the title of a 44-page booklet published for distribution by Thiokol Corp., Yardville, N. J. Thiokol is a synthetic rubber which is said to stand up under gasoline, oil, sunlight and ozone.

A new edition of the "Book of Pipe Protection" has been prepared by General Paint Corp., Hill, Hubbell & Co. division. It discusses the principles of pipe protection and explains the company's products and methods of application.

The new and improved Jensen pumping unit receives special attention in the current number of the Bridgeport Bulletin, published by the Bridgeport Machine Co., Wichita, Kans.

A 32-page catalog issued by Ingersoll-Rand, 11 Broadway, New York, covers its line of two-stage, air-cooled portable compressors. Besides giving details of construction, it shows compressors at work on various jobs.

Miller sand pumps are the subject of a folder mailed on request by Miller Sand Pump Co., Oklahoma City, Okla.

Eighteen reasons for using Durant insulated pipe are presented in a folder sent out by Ehret Magnesia Manufacturing Co., Valley Forge, Pa.

The Lufkin Rule Co., Saginaw, Mich., offers a circular describing Mezurall tape-rules.

A bulletin offered by Jon R. Long, Fort Worth, Tex., describes and pictures Jon R. Long's Silvertube precision working barrels, made from Detroit steel tubing.

Two new bulletins are offered by Oil Well Supply Co., one on 26-inch make-and-break rotary model 34, and one on the No. 7 vertical twin-cylinder steam engine.

Current literature of the Flexible Steel Lacing Co., 4607-31 Lexington Street, Chicago, announces special lengths of Alligator steel belt lacing.

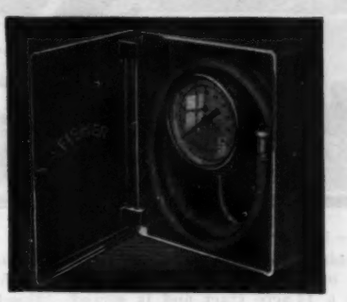
Men Widely Known in the Equipment Field

Maloney Tank Manufacturing Co., through its vice president and general manager, J. S. Warren, has appointed J. A. Morgan sales manager for the Mid-Continent district. Jim Morgan served for years with major oil companies before 1920, and since then has devoted his entire time to sales of oil-field supplies, oil-field specialties and separators. This appointment of Mr. Morgan to the official staff of the Maloney organization will give direct sales contact with the trade, the manufacturing plant in Tulsa and the field representation.

J. A. MORGAN

New Low-Pressure Test Gauge Put on Market by Fisher

The Figure No. 50 low-pressure test gauge has been developed by Fisher Governor Co., Marshalltown, Iowa, for indicating pressures from 0 to 1½



pounds. This gauge has been developed especially for the test man or service operator of industries dealing with low pressures. Especially in the gas industry is there a wide adaptation for this particular type of test gauge. This gauge is compact in size and sturdy in construction, and it will stand 100 per cent over shoot of pressure without damage, according to the manufacturer.

Low-pressure direct readings are indicated on the dial, which has double calibration, 0 to 35 inches of water column and 0 to 20 ounces. Well spaced black markings on a silver dial permit easy and accurate reading.

This gauge is of the bronze diaphragm type of construction. The movement mechanism is independent of the case in which it is mounted. This feature, which is used in only the highest quality type of gauges, enables the gauge to retain its calibration within close limits. It is checked and calibrated with a water column and is guaranteed to be accurate within one-eighth inch of water column.

Electrode Offered for Welding Bronze, Brass and Copper

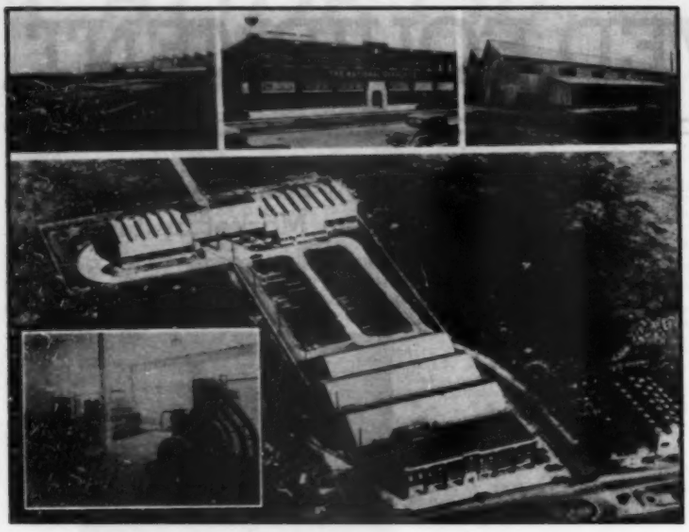
A new field of welding is opened by a phosphor-bronze arc-welding electrode announced by the Lincoln Electric Co., Cleveland, Ohio. "Aerisweld" provides a solid homogeneous deposit, having characteristics of true phospher-bronze with notably high tensile strength.

The high quality weld metal produced by the electrode is said to make it ideal for fabricating new products or reclaiming old ones of bronze, brass or copper. Impeller blades in pumps and turbines are readily welded. The electrode is also valuable for welding galvanized sheets where minimum disturbance of the galvanizing is essential. In reclamation of worn parts of equipment, "Aerisweld" is used to build up and fill in bronze castings such as journal-boxes and containers, for building up bronze valve seats, bronze bearing surfaces on steel or cast iron, numerous guides, etc.

Angle Switching Equipment

Angle switching equipment for controlling large synchronous motor-driven reciprocating pumps and compressors to prevent the compression strokes on different units occurring in unison has been developed by the Westinghouse Electric & Manufacturing Co. Employing an electronic tube, this new device effectively reduces the magnitude of current pulsations where two or more drives are used. Minimum pulsations are desirable to reduce flicker in lights and interference with the operation of other electrical equipment.

NATIONAL SUPPLY CO.'S HOUSTON PLANT



Here is shown the National Supply Co.'s plant in Houston, Tex. This plant, on Navigation Boulevard, occupies a 14-acre tract and is served by the Houston Belt & Terminal Railroad. It includes an administration building, three warehouses, and two machine and assembly shops.

The first floor of the administration building is devoted to a show room, displaying National's oil-field machinery, including three Superior diesel engines which drive the generators supplying the plant with power and light. The second floor houses the administration, sales and engineering staffs.

The warehouse unit is composed of three buildings, two of which carry stocks of oil-field equipment. Cranes and spur tracks permit speedy handling of the heaviest equipment by either truck or rail. The third building is a completely stocked oil-field store.

The manufacturing and field service shop unit, occupying two buildings having a floor space of approximately 20,000 square feet, is equipped to give service required by the producer.

The manufacturing program will be confined for the present to a limited line of oil-field equipment. Provision has been made for expansion. Complete stocks of Spang-Chalfant oil-country tubular goods are maintained.

Rocky Mountain Runs

Estimated daily average production of Rocky Mountain fields for the week ending March 21 was as follows:

WYOMING

	Bbls.
Salt Creek	16,550
Big Muddy	1,540
Badger Basin	40
Byron	850
Dallas Derby	560
Dutton Creek	40
Elk Basin	640
Ferris	20
Frannie	1,540
Grass Creek	2,230
Hudson	260
LaBarge	1,200
Lance Creek	3,660
Lost Soldier	1,250
Midway	50
Oregon Basin	1,910
Osage	600
Pilot Butte	20
Rock River	2,140
Poison Spider	90
Teapot	10
Total Wyoming	35,200

MONTANA

Buckley-Border	120
Cat Creek	710
Cut Bank	6,240
Dry Creek	1,500
Kevin-Sunburst	3,670
Lake Basin	50
Pondera	1,100
Total Montana	13,390

COLORADO

Florence	230
Fort Collins and Wellington	370
Iles Dome	2,970
Moffat	390
Orchard	50
Rangely	70
Tow Creek	190
Total Colorado	4,270

NEW MEXICO

Artesia	630
Cooper	8,330
Eunice	14,960
Hobbs	26,810
Hogback	200
Jal	3,410
Lea	950
Maljamar	1,670
Monument	3,060
Rattlesnake	720
Table Mesa	90
Total New Mexico	60,830
Total Rocky Mountain region	113,690

J. R. Manion, president of the Sinclair Prairie Pipe Line Co. with headquarters at Tulsa, was a business visitor to the company's offices at Houston, Tex., the past week.

CLASSIFIED ADVERTISING

Royalties—Production

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Securities and Exchange Commission. Inquiries invited.

B. D. BUCKLEY

Paul Brown Bldg., St. Louis, Mo.

OIL Production, Royalties, Leases, Land and estimating their values, has been my work for the past 30 years, with headquarters here, but covering parts of Oklahoma and New Mexico, States of many opportunities. I offer my services and experience to investors in these lines. E. B. Reeves, Box 13, Alanreed, Gray County, Texas, or Box 475, McLean, Texas.

FREDERICK A. SANSOME AND COMPANY
522 Fifth Avenue
NEW YORK, N. Y.
Will buy, sell or quote.
Oil Interests. Wholesale Only.

ROYALTIES and leases in all fields, producing and nonproducing, Kans., Okla., Tex. Get my list before buying. JAMES R. HAYNES, Grantville, Kans.

Royalties—Production

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

EXTENDING FLORIDA PROGRAM
Drilling Blocks Supported by Geophysics, Geology and Financial Assistance Now Ready. Responsible Independent Operators Contact.
OIL DEVELOPMENT CO. OF FLORIDA
Groveland, Florida.

PRODUCING OIL ROYALTIES
Bought (Wholesale) Sold.
Inquiries invited from Oil Companies, Bankers, Dealers.
JOHN J. KOEHLER
20 Broad St. New York.

FOR SALE: Drilling blocks 5000 acres up. Miller, Lafayette, Nevada and Columbia Counties, Arkansas. Titus, Cass and Bowie Counties, Texas. Maps and details. Write La-Ark-Tex Resource Co., Inc., Texarkana, U. S. A.

Van—East Texas—Louisiana Royalties
Bought—Sold.
WILLIAM MONROE LAYTON
67 Wall St., Suite 1510, New York City.

Producing and Non-Producing Royalties.
Bosco, Van, Rodessa, West Texas.
Wholesale—Retail
W. E. HOUSEL
76 Beaver Street, New York City.

ROYALTY BUYERS. S. W. Pressey purchased at receivers sale the great Starr well on Vegas Dome and is drilling to completion. This deep test highly recommended. Now drilling Pennsylvania at 5100 with good gas and oil showings. The greatest bet in New Mexico. I have optioned 2600 acres adjoining the well and all structural. Can sell this tract with its ⅛ Royalty very low. Here is a real proposition as the land alone worth the money. Wm. H. Springer, Las Vegas, New Mexico.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Oklahoma.

Royalties—Production

Join Me, Produce Oil

Have 40 acres which I believe proven which I value at $4,000. Estimated cost of first well complete is $8,000 including pumping equipment. Depth only 2100 feet. Should get 100 to 200 barrel well. Will sell ONE FOURTH interest to you for $3,000.

Also have 110 acres I believe proven; depth of sand 2300 feet. Figure present value of lease $11,000; and cost of well complete $10,000. Should get 100 to 300 barrel well. Will sell you ONE FOURTH interest $5,250.

You should join me in both wells. Address:

G E. Fisher & Co.
518 Key Building,
Oklahoma City, Okla.

PRODUCING OIL ROYALTIES
(ALL FIELDS)
Bought, Sold and Quoted.
HENRY L. BAKER CO.
207 Van Nuys Bldg.,
Los Angeles, Calif.
Telephone Trinity 7391.

VAN POOL — EAST TEXAS
Bought — Sold — Wholesale.
W. R. Brown & Co., Inc.
14 Prospect Pl., East Orange, N. J.

PRIME POTENTIAL ROYALTIES under and/or offsetting drilling wells. Wholesale exclusively. L. E. Morency, Hunt Building, Tulsa, Oklahoma.

I BUY AND SELL oil royalties and producing wells, East Texas field. B. A. "KIPPER. Longview, Texas.

MONTHLY PAYING ROYALTIES on which we have filed SCHEDULES A with the SEC at WASHINGTON.
Quoted Dealers Exclusively.
W. E. COOK
Suite 812, Palace Bldg., Tulsa, Okla.

Royalties—Production

PRODUCING OIL ROYALTIES
for dealers.
H. P. BOWEN
842 Kennedy Bldg., Tulsa, Okla.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada.
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception."
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.

Business Opportunities

GEOLOGIST desires connection on percentage basis plus expenses. Highest credentials. Address Box G-823, The Oil and Gas Journal, 415 Lexington Avenue, New York City.

DRILLING MUD—High absorption, viscosity and gravity. One-third heavy metallic oxides. Correspondence with distributors and heavy users invited. E. P. HUNTER, Bedford, Indiana.

Mailing Lists

OF ROYALTY investors by deed, guaranteed. Oil Industry Mailing List Co., Tulsa Loan Building, Tulsa, Oklahoma.

ROYALTY OWNERS
Names and addresses in any State.
Royalty Lists, Box 105, Ft. Worth.

For Sale—Maps

MAP OF NEW TALCO FIELD, Titus and Franklin Counties, Texas. All West Texas Counties. Send $1.00 for Oil Map of Texas and Eastern New Mexico.
ZINGERY OIL MAP CO.
Fair Bldg. Ft. Worth, Tex.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Used Refinery Equipment

Dismantling two large modern refineries located in Oklahoma and Texas. Everything from a Cracking Still to a Filling Station Pump. Thousands of items. Send for latest illustrated catalog. Get our quotations and see how much you save.

BROWN-STRAUSS CORPORATION

Main Office—1446 Guinotte Ave., Kansas City, Mo.

Branches

Sapulpa, Okla. Arkansas City, Kans. Pyote, Texas.

LARGEST SURPLUS STOCKS
WIRE ROPE

Drastically reduced prices. Drilling lines, Sand lines, Hoisting cables. All sizes ⅜"-2"—All constructions. Also wire rope for any other purpose. Wire or write us—prompt shipments.

DULIEN STEEL PRODUCTS, INC.
233 Broadway, New York City, New York.
"Buyers of surplus steel products."

---

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

DIESEL Engine for sale. 225 H.P., 360 R.P.M. Chicago Pneumatic Tool Engine Direct Connected to G.E. 2,300 Volt, 187 K.V.A. Generator. Purchased Summer 1933. Run less than thirty-five hundred hours. Engine junk. United Power Company, 1105 First National Building, Oklahoma City, Oklahoma.

SEVERAL USED ROTARY RIGS
Spudders and Drilling Machines.
Several Steel Derricks & Rotary Equip.
J. S. Daniel, Beacon Bldg., Tulsa.

FOR SALE — Three portable Southwestern absorption gasoline plants complete. Globe Gasoline Company, Blackwell, Oklahoma.

FOR SALE — 5 x 10 Gaso portable pumping unit powered with Hercules motor. General Machine & Supply Co., Wichita Falls, Texas.

TWO—300 amp. Lincoln Engine driven welders. A-1 condition. Stationary type. Service Co., 3732 Cedar, Cleveland, Ohio.

Equipment Wanted

WILL BUY 20" and 24" solid tool bits. Quote cash price and description. Address Box H-203, The Oil and Gas Journal, Tulsa, Oklahoma.

Financing

JAMES E. MILLER, 604 W. Seventh St., Tulsa, Okla., will aid in financial marketing problems. Fee basis.

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Box 5411, Philadelphia, Pa.

Situations Wanted

GEOLOGIST — 14 years consultant, familiar with all phases of oil and gas production, available April 1st, on interest and expense basis only. Leonard, 2614 Victor, Kansas City, Missouri.

PETROLEUM Engineer and Executive Manager, now employed, desires change to position of responsibility. Fully qualified design process equipment, handle engineering, erection and operation. Wide acquaintence and broad experience in industry with background chemical engineering training, ten years plant management and eight years design, sales, construction and operation process plants. Can produce results efficiently and economically. Address Box H-202, The Oil and Gas Journal, Tulsa, Okla.

REFINERY SUPERINTENDENT — Graduate chemical engineer, 9 years experience design, construction, operation of cracking, skimming, road oil, asphalt, treating, vapor recovery plants. References. Address Box H-193, The Oil and Gas Journal, Tulsa, Oklahoma.

Accounting-Bookkeeping-Office Manager. Clerical, field clerk and know materials. 7 years experience, 5 years oil field and office. Age 30. Married. References. Unemployed. Go anywhere. Write B. A. Wright, P. O. Box 1874, Tulsa, Okla.

Help Wanted

Wanted—Manufacturers' Agent
Company long established in the manufacture of metal cutting tools used by oil well equipment manufacturers has openings in several districts for competent representation. Commission arrangement with person handling noncompetitive lines considered. State experience, references, etc. Address Box H-204, The Oil and Gas Journal, Tulsa, Okla.

WANTED—A salesman to sell bleaching clays to oil refineries and drilling mud to oil producers in Texas and Oklahoma. State qualifications, experience, and references. Address Box H-192, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED—Chemist, exp. with lubricating oils to sell patented product to oil industry. State exp., edu., religion. Address Box H-200, The Oil and Gas Journal, Tulsa, Oklahoma.

Leases—Production

12,500 acres ⅞ths 88 leases Noxubee County, MISS. Woodbine sand 2200-2500 ft. 6c acre and 1/64th roy. 5 mos. free, 25c rentals. Operators only. Box 303, Memphis, Tennessee.

REMARKABLE "Oil Detecting Chemical." Send $1. Geol. Scien. Serv. Co., 706 Texas Natl. Bk. Bldg., Ft. Worth, Tex.

FOR SALE, OIL AND MINERAL RIGHTS, under lands in Eastern Colorado, leased in solid blocks, largely by major companies; taken after seismic surveys and core drillings. Titles clear. Get ready for the next big oil play. Warren Shamburg, Burlington, Colorado.

Everything in Refinery Equipment

The Altitude Refinery at Chanute, Kansas.
The Marathon Refinery at Boynton, Oklahoma
The Sinclair Refinery at El Paso, Texas.
The Pure Oil Refinery at Ardmore, Oklahoma.

Everything for sale in these plants. ALL of our EQUIPMENT is RECONDITIONED. Inventories on request. Pressure tanks and Hot Oil Pumps our specialty.

Wire — Phone — Write

W. C. BERRY —or— H. J. GALAMBA

SONKEN-GALAMBA CORPORATION

64 North Second Street Kansas City, Kansas.

Steel Storage Tanks

We will erect latest type 55,000 bbl. all steel storage tanks at a great saving. Over 500 tanks on hands from 500 bbls. to 80,000 bbls.
Four 55,000 bbl. all steel tanks near Seminole, Oklahoma, for rent, we own ground and pipe connections.

We can furnish any quantity of steel tank sheets from ⅜-inch to ½-inch inclusive in carload lots at bargain prices.

Wire—Phone—Write—W. C. Berry

SONKEN-GALAMBA CORPORATION

64 North Second Street Kansas City, Kansas.

Leases—Production

WILDCATTERS' PARADISE
Many approved unexplored structures where twenty Refineries operating and all paying approximately One Dollar Seventy cents ($1.70) per barrel freight. Unlimited outlet for all oil and gas produced. No proration of any kind. Seven sands at total depth of 2500 feet. Unlimited acreage can be had for small cost. My interest primarily to secure oil for our Refineries. Suggest legitimate producers, operators or promoters write for full details. No expense to you. Address Box H-201, The Oil and Gas Journal, Tulsa, Oklahoma.

Leases and royalties and two well located blocks in Lane County, Kansas. J. E. Mowery, Dighton, Kansas.

BROKERS AND SALESMEN. I have bought the Starr Well and Vegas Dome near Las Vegas, N. M., fully geologized and recommended structure. Well drilling Penn. formation at 5100 feet. Offsetting leases to this great Starr well afford the greatest opportunity for oil speculation in New Mexico. Will sell at low prices. Address S. W. Pressey, Pueblo, Colo.

Leases—Production

FOR SALE—Five year paid up oil and gas lease on ten thousand acres in Schleicher County, Texas. Address H. B. Opp, Burnet, Texas.

FOR SALE — Three Thousand Acre Drilling Block lying Southeast of Howard-Glasscock Permian Pool and Northwest of Mertzon Shallow Pool showing splendid geology. This is a real opportunity. Address H. B. Opp, Burnet, Texas.

LEASES and Royalties for sale. Rodessa, Sligo and Bethany area. Also have choice North Louisiana drilling block where opportunity is ripe. A. D. King, with Bi-State Oil Co., Inc., 538 Ricou-Brewster Building, Shreveport, Louisiana.

DRILLING BLOCK—I have block to requirements on well defined Geologic structure, Ashley Co., Ark. Who will drill same on acreage basis? Box 197, Hamburg, Arkansas.

YOAKUM Co., Texas, 1280 acres, Sec. 596 and 597. Will lease all or part. Submit offer to owner, Dr. J. A. Robinson, Fort Harrison, Montana.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

LANDS, Leases, Royalties, anywhere, bought, sold. Lands, $2 acre, up. Leases 25c acre, up. Advise needs. American Investment Co., Houston, Texas.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

DEALERS — BROKERS
New form of Oil Investment especially suitable for small and large investors. Issued against producing wells only. No assessments or development expense. Exceptional return. Wells located in long life prolific area. Attractive price and steady return insures continuing customer demand. Limited number of selected dealers will be appointed.
Write or wire for full information.
W. E. HOUSEL
Field Office:
1212 City Bank Bldg. Shreveport, La. 76 Beaver St. New York City.

Oil leases or Royalty, Drilling Propositions anywhere in Central Oklahoma.
I. H. TOWNSEND
P. O. Box 603, Shawnee, Okla.

Incorporations

DELAWARE CHARTERS: Complete incorporating and organizing service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY

CLASSIFIED RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.25*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

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6-7-8—Excelsior Springs, Mo., Western Petroleum Refiners Association, Elms Hotel.

9-10—Shreveport, La., A.P.I., southwestern Division of Production, Washington-Youree Hotel.

11-13—Tulsa, Petroleum Industry Electrical Association.

12-17—Kansas City, Mo., American Chemical Society, Petroleum Division, Symposium on Motor Fuels.

14—Los Angeles, Calif., A.P.I., Division of Production, spring meeting.

14-18—Detroit, Mich., Oil Burner Institute.

16-18—Cleveland, Ohio, National Petroleum Association, semiannual meeting, Cleveland, Hotel.

20-25—Houston, Tex., Oil Equipment and Engineering Exposition.

May

5-8—Dallas, Tex., A.G.A. Natural Gas Department, Baker and Adolphus Hotels.

13-15—Tulsa, midyear meeting, American Petroleum Institute, Mayo Hotel.

13-15—Tulsa, Natural Gasoline Association of America, fifteenth annual convention, Hotel Tulsa.

15—Tulsa, Institution of Petroleum Technologists, American Meeting, Mayo Hotel.

16-23—Tulsa, International Petroleum Exposition and Congress.

21—Tulsa, Independent Petroleum Association of America, midyear meeting.

22—Tulsa, National Stripper Well Association.

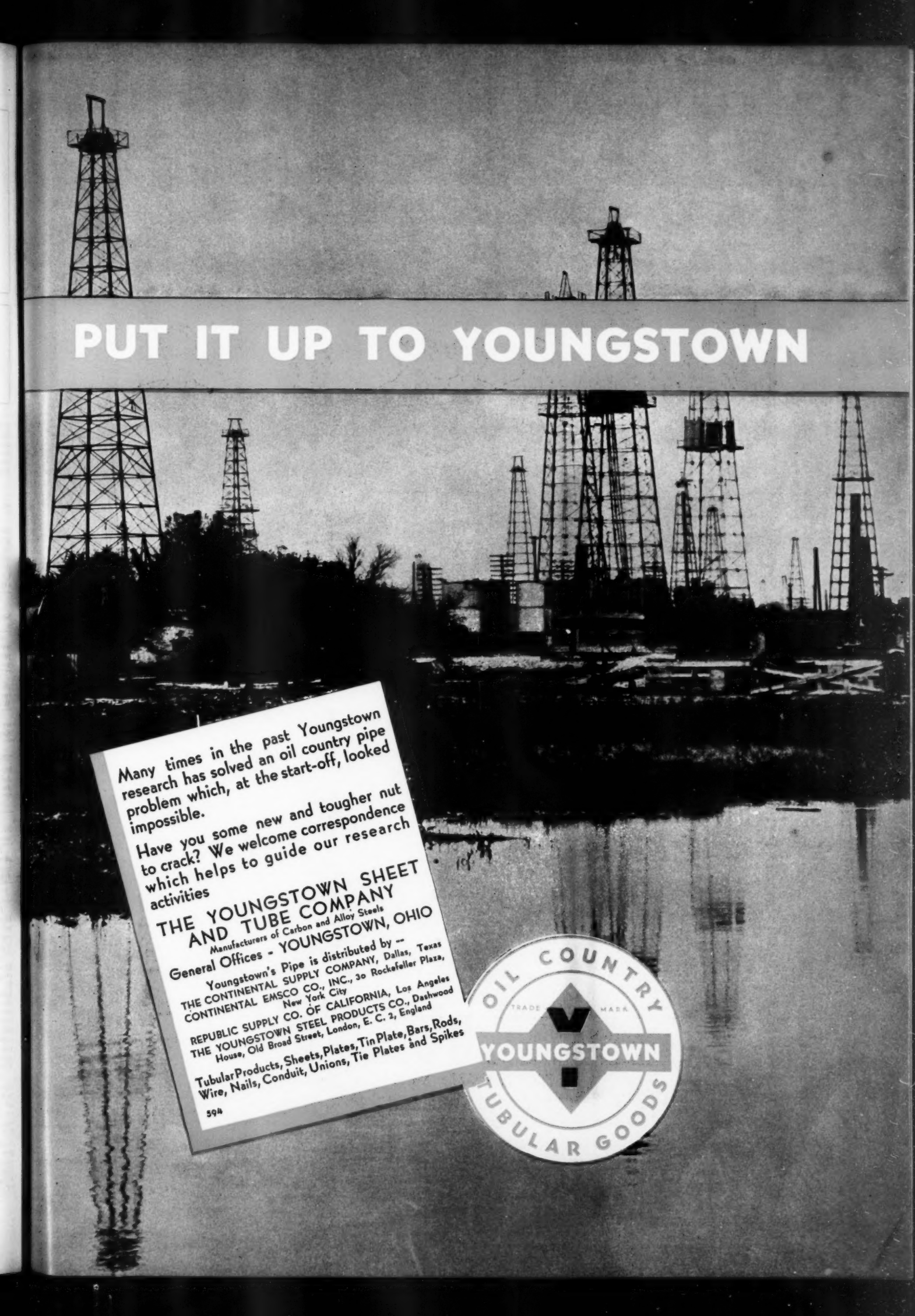
25-27—New York, A.G.A. Production and Chemical Conference.

25-28—New Orleans, La., National Association of Purchasing Agents Convention.

June

17-20—Dallas, Tex., American Society of Mechanical Engineers.

18-19—State College, Pa., Pennsylvania Grade Crude Oil Association, thirteenth annual meeting.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Earl Warren, Derrick Man
Bo McCale
George Elm, Driller
Oliver Love, Fireman
John Shelby, Pipe Man

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